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When you finish reading this magazine, place a 1-cent stamp on this notice, mail the magazine, and it will be placed in the hands of our soldiers or sailors destined to proceed over-seas.

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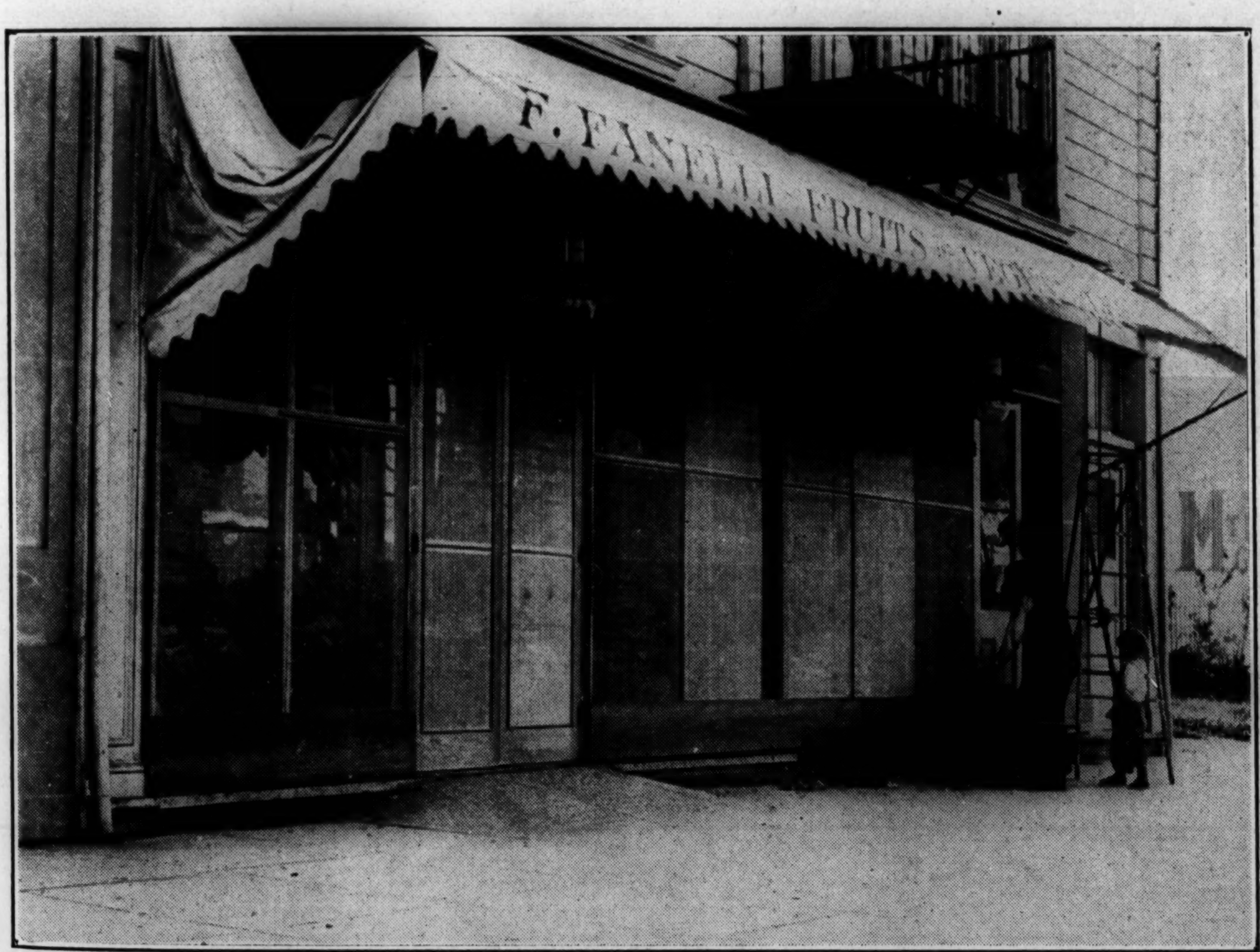
CALIFORNIA STATE BOARD OF HEALTH

MONTHLY BULLETIN



Every food-producing and food-dispensing establishment in every city of Santa Clara and San Mateo counties, including San Jose, is now screened against flies. This is but a small part, however, of the recent accomplishments in the improvement of sanitary conditions in these counties, undertaken primarily because of the presence of thousands of soldiers.

¶ WAR-TIME SANITATION
SMALLPOX VACCINATION

¶ MAY, 1918

California State Board of Health

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CALIFORNIA STATE BOARD OF HEALTH

MONTHLY BULLETIN

Vol. 13 MAY, 1918 No. 11

TABLE OF CONTENTS.

Page

EDITORIALS—An Elaborate Piece of Work in Sanitation—Bubbling Fountains Not Always Sanitary—Won't Kiss the Flag Unless It's Sterilized—A Bulletin Devoted to Infant Welfare—Belgium First Country to Adopt Health Inspection—Better Babies Make a Better Nation—War Meeting of Public Health Association—To Investigate Swimming Pool Sanitation Problems—Dr. Michelson Head of Venereal Disease Bureau—Public Health Must Be Protected Now 450

MEDICAL INSPECTION OF SCHOOL CHILDREN 453

WAR-TIME SANITATION 454

ALKALINE GLYCERIN AS A CAUSE OF SMALLPOX VACCINATION FAILURES, by John N. Force, M.D., Gr.P.H., Consulting Epidemiologist, California State Board of Health 458

CONDEMNATION OF FOOD PRODUCTS 462

TUBERCULOSIS IN CALIFORNIA STATE PRISONS, by L. L. Stanley, M.D., Resident Physician, San Quentin 463

MORE MEDICAL MEN NEEDED IN THE ARMY 465

APRIL MEETING OF THE STATE BOARD OF HEALTH 466

MEASLES WIDELY EPIDEMIC DURING MARCH, Report of the Bureau of Administration for March, 1918, W. H. Kellogg, M.D., Director 467

TYPE DIAGNOSIS OF LOBAR PNEUMONIA, Report of the Bureau of Communicable Diseases for March, 1918, Frank L. Kelly, M.D., Gr.P.H., Acting Director 469

STATEWIDE WORK IN VENEREAL DISEASE CONTROL, Report of the Bureau of Veneral Diseases for March, 1918, H. G. Irvine, M.D., Director 472

SAN FRANCISCO ASSURED OF OUTSIDE TUBERCULOSIS SANATORIUM, Report of the Bureau of Tuberculosis for March, 1918, E. L. M. Tate-Thompson, Director 475

BIRTHS, DEATHS AND MARRIAGES FOR FEBRUARY, Report of the Bureau of Vital Statistics, George D. Leslie, Director 476

LICENSING OF WATER WORKS AND SEWER SYSTEMS, Report of the Bureau of Sanitary Engineering for March, 1918, C. G. Gillespie, C.E., Director 478

LARGE NUMBER OF SAMPLES EXAMINED, Report of the Bureau of Foods and Drugs for March, 1918, E. J. Lea, M.S., Director 486

REQUIREMENTS OF ACCREDITED SCHOOLS REVISED, Report of the Bureau of Registration of Nurses for March, 1918, Anna C. Jammé, R.N., Director 494

MONTHLY BULLETIN
CALIFORNIA STATE BOARD OF HEALTH

Devoted to the Prevention of Sickness and Death

¶ Entered as second-class matter, August 15, 1905, at the post office at Sacramento, California, under the Act of Congress of July 16, 1894.

Sent free, on request, to any citizen of California.

WILFRED H. KELLOGG, M.D., Secretary and Executive Officer . Editor
GUY P. JONES, Morbidity Statistician . . . Associate Editor

An Elaborate Piece of Work in Sanitation. Edward T. Ross, State Sanitary Inspector, with the co-operation of the military authorities of Camp Fremont as well as the city and county officials of San Mateo and Santa Clara counties, has just completed a most elaborate piece of work in the sanitation of the district surrounding Camp Fremont. The sanitation of nearly all extra-cantonment zones throughout the country has been undertaken by the United States Public Health Service. In this instance, however, the service paid a distinct compliment to the California State Board of Health by delegating to the board this important work in the Camp Fremont zone, stating that the health organization in California is thoroughly equipped for this sort of work.

* * *

Bubbling Fountains Not Always Sanitary. Observations upon the use of the sanitary or bubbling drinking fountains show that they are not always sanitary, and for reasons that are difficult to overcome by any sort of mechanical device. Who has not observed the small boy amusing himself by mouthing the little globular water exit in a manner that can not fail to implant therein the germs of diphtheria if he should happen to be a carrier of that infection? The truth of the matter is that most forms of the bubbling fountain are almost as efficient in the exchange of mouth secretion as is the common drinking cup. The hygienically wise will always see to it that the surfaces are well washed before drinking and then they will avoid touching the lips to anything but the top of the water stream. It is extremely probable that it will become necessary to adopt regulations governing the form of fountain permissible for public use.

* * *

Won't Kiss the Flag Unless It's Sterilized. A workingman in Oakland, accused of being pro-German, recently refused to kiss the flag as demanded by his fellow workmen, unless the emblem were first sterilized in alcohol. It is certain that compliance with such a demand can not accomplish any patriotic good to the individual and it would seem that the man, whoever he may be, could possibly, through his mouth secretions, infect the fabric of the Stars and Stripes. Most flags, flying in fresh air and sunshine, are about as free from pathogenic organisms as a pink cloud in a summer sky. We wonder if this man is as particular regarding the use of the common drinking cup, either with or without alcoholic content. Is he willing to risk his face and hands on a common towel? If he is equally particular in protecting his health through the avoidance of these ordinarily accepted dangers, we need him—there is a possibility that he can be made into a good citizen. But first, let it be certain that he is one hundred per cent American.

* * *

A Bulletin Devoted To Infant Welfare. The June number of the Bulletin will be devoted to the subject of infant welfare. It will be prepared under the direct supervision of Dr. Adelaide Brown, member of the California State Board of Health and chairman of the Children's Year Committee under the State Council of Defense. This issue will contain valuable information for reducing the state's infant mortality rate, and it will provide definite plans for saving the lives of 1,822 California children, the state's quota of the 100,000 lives to be saved in the United States this year, according to the program of the Federal Children's Bureau.

* * *

Belgium First Country to Adopt Health Inspection. Belgium, whose civilization is so nobly withstanding the terrific onslaught of Germany, was the first country in the world to systmatically adopt the health inspection of school children. Perhaps the remarkable fortitude of the Belgians during these past few years is due in no small measure to the good physical condition of the people, brought about by the correction of defects in early life, and discovered through the national system of health inspection. Even today, Belgian children, victims of the rigors of war, are sent to Holland for periods of a few weeks, in order that they may recuperate, obtain milk and other nourishing foods unobtainable in war-stricken Belgium, and return to the little kingdom better fitted for withstanding the hardships inflicted by the German destroyers. Belgium realizes that the country's future lies in her children. The future of our own United States, no less, lies in the future of our young Americans. Let no trouble or expense be spared in promoting their health and well-being.

* * *

Better Babies Make a Better Nation. The State Board of Agriculture, with the cooperation of the Children's Department of the Board of Control and the State Board of Health, will hold a child welfare exhibit during the State Fair week. The plan is to have at least four days of this time devoted to a conference. On these days mothers may bring their children under five and may discuss their needs with people schooled in their needs. Like the conference at the Panama-Pacific Exposition, this movement is not an effort to display prize babies nor will it attempt to diagnose the ailments of sick babies, but it will give interested parents an opportunity of discussing with specialists the needs of their families. There will be physicians in attendance, who have volunteered their services because of their interest in the work; the nurses of the Board of Control children's department will assist them, and members of the Parent Teachers' Association and other interested friends will serve as an information and hospitality committee. Plans have been made to collect all child welfare charts in California and to have at least one lecture a day on subjects of prime importance to babies and mothers.

* * *

War Meeting of Public Health Association. The central theme of the meeting of the American Public Health Association to be held in Chicago October 14–17, 1918, will be: "The Health of the Civil Population in War Time." While we are exerting every effort in sending healthy soldiers to France, it is well to remember that our soldiers are recruited from the civilian population and the conservation of the health of the people at home is therefore a most important factor in protecting the health of our fighting men. This war is not being fought on foreign battlefields only, and the Chicago meeting will provide an unusual opportunity for learning how to conduct the civilian program for winning the war on home battlefields.

* * *

To Investigate Swimming Pool Sanitation Problems. In order to investigate methods of purifying water in swimming pools, disinfection of bathing suits and similar problems connected with the sanitation of public bathing places, the Bath House Association of Southern California, composed of the owners and managers of such institutions, has engaged Dr. C. H. Griffin of Los Angeles as its bacteriologist. He will make a comprehensive series of tests for the purpose of determining the best available methods for the solution of these problems. This work will be of value in determining standards for the sanitation of public swimming pools and will, no doubt, offer a valuable contribution to the meager literature on the subject. The officers of the Bath House Association of Southern California are J. J. Warrick, Los Angeles, president; C. D. Rene, Long Beach, vice president; L. A. Henery, Ocean Park, secretary and treasurer. These men are working in active cooperation with the Bureau of Sanitary Engineering of the State Board of Health.

* * *

Dr. Michelson Head of Venereal Disease Bureau. Dr. Lewis Michelson of the faculty of the Stanford University Department of Medicine has been appointed Director of the Bureau of Venereal Diseases of the State Board of Health, succeeding Dr. H. G. Irvine, who has returned to Minnesota to assume the directorship of a similar bureau, under the Minnesota State Board of Health. Dr. Michelson is a graduate of the Stanford University Medical Department, and took his post-graduate work in Europe. He was later connected with the James Buchanan Brady Urological Institute at Johns Hopkins Medical School, and with St. Luke's Hospital in New York City.

Public Health Must Be Protected Now. An editorial in the Monterey *Cypress* of recent issue places strong emphasis upon the essential need for protecting the public health during these momentous days. The editorial reads as follows:

"The public health is of prime military and economic importance. Most disease, and epidemics especially, are caused by preventable unclean, unsanitary conditions. Noncombatants—the babies, the youth, the women and the men too old for military service—are military essentials in the potential or the economic sense, and must be protected now as never before against disease and epidemic. Remember, too, that medical and nursing service in American cities and towns is now almost depleted, and that therefore there would be frightful difficulty in coping with any epidemic now."

MEDICAL INSPECTION OF SCHOOL CHILDREN.

Medical inspection of schools should be instituted at an early a date as is possible and should be under the control and at the expense of the health department because it is the function of the health officer to eliminate disease and to build up the people to resist disease.

It is true that the first inspection of public schools was the result of the desire of certain people to eliminate communicable diseases from the public schools, but it was soon found that that work was of very secondary importance to the work of detecting physical defects in the children that materially interfered with the maintenance of the highest resisting power capable by that child.

The conditions particularly referred to were those of the tonsils and the presence of adenoids, the decayed condition of the teeth and the infected buccal cavities; also the evidence of under or improper feeding, improper clothing, improper sight, deformities of the mouth and nose and frequently disease of the lungs.

The importance of each one of these could be dilated upon at length but I think that we can group them all under the general statement that these interfere with the nutrition of the body which results in the improper supply of food or developing material to the brain of the child which results in the inability of the child to receive instruction as quickly or as perfectly as it could in a healthy condition. It likewise induces neglect on the part of the child of its work because of its inability to advance with other children.

Inspections of school children detecting these conditions and the remedying of the same will assist in developing an independent young people who are less likely to become burdens to the state directly or indirectly when they develop into adult life. We adults must make the sacrifices in high taxes for the benefit of the future, which means the children. If a community can not bring itself to be contented to work for the future it will certainly relatively fall behind those who do.

—*Dr. C. Hampon Jones.*

WAR-TIME SANITATION.

It's a long way from the sunny Santa Clara Valley in California, "the valley of heart's desire," to the blood-soaked battle fields of France, but one might think that the allied armies were assembled in California, to judge from the excellent sanitary conditions found today in all of the territory surrounding Camp Fremont. Every town and city within this area conforms absolutely to the sanitary requirements of the California State Board of Health and of the military authorities. This means that every hotel, restaurant and eating house, lunch counter, cafe, cafeteria, soda fountain, ice cream parlor, soft drink stand, fruit and vegetable stand, meat market, bakery, grocery, creamery, dairy and every other place where food is manufactured or dispensed, is in perfect sanitary condition. It means also that every barber shop and billiard hall conforms to the sanitary regulations. It means that domestic and business premises are free from rubbish and that all fly-breeding places have been removed. It means that every possible menace to the health of soldiers, through insanitary conditions, has been eliminated, and this has all been accomplished with the earnest co-operation of city and county officials, as well as the citizens living in the cities and rural districts of both Santa Clara and San Mateo counties.

A few store fronts in San Mateo and Santa Clara counties looked like this one a few weeks ago. Merchants in these counties have co-operated with the State Board of Health and with the military authorities, with the result that all such places are now screened against flies.

This work was accomplished under the direction of Edward T. Ross, Sanitary Inspector of the California State Board of Health, with the active co-operation of the military authorities at Camp Fremont, assisted by the health officers and inspectors of the various cities involved. San Mateo, Redwood City, Menlo Park, Palo Alto, Mayfield, Mountain View, Sunnyvale, Lawrence, Santa Clara and San Jose have all been inspected, reinspected, and finally pronounced in perfect sanitary condition. Under the military regulations no soldier is allowed to patronize any of these places of business unless a certificate has been issued to the proprietor, such certificate stating that the establishment has been approved and that it has complied with all of the sanitary regulations. More than five hundred such certificates have been issued to business houses in these cities. In many cases a considerable outlay of money was required to bring the establishment up to the required standard. In San Jose there was some delay in completing the work because of the inability to get carpenters and plumbers. The mere screening of the fronts of grocery stores and fruit stands brought such a rush of business that builders and carpenters were unable to in any way meet the demand. The proprietor of one establishment in San Jose was required to spend $2,300 to make his place of business sanitary. He was glad to make the expenditure, however, and is pleased with the results obtained.

Every article of food in process of preparation, distribution or display in every hotel, restaurant or other eating place in these cities is protected from flies, dust and dirt. Pies and cakes are covered; bread is wrapped or kept in glass cases. Flies absolutely can not get access to any article of food in these establishments. A soldier who enters any eating place in the vicinity of Camp Fremont is assured of getting clean food, prepared and served by persons in good health, in clean surroundings. The enforcement of the regulations pertaining to these eating places is perhaps the most important of all, except the regulations pertaining to dairies and creameries. Under the strict enforcement of the state milk law, however, there is little danger of unclean milk supplies. The sterilization of glassware at all soda fountains and ice cream parlors is also an important measure, which is thoroughly enforced in all of these places. The regulations of the California State Board of Health for the sterilization of such glassware require steaming or boiling, or if this process is not convenient, the utensil may be dipped in a 5 per cent solution of lye, preferably hot. Of course, the use of individual paper cups is permitted.

Formerly, it was the custom to place displays of fruits, vegetables and other food products in front of fruit stands and grocery stores, where flies could easily gain access to them. The thought of flies traveling from the filth in street gutters to fruits and vegetables intended to be eaten raw is never pleasant, and with thousands of men in uniform in the vicinity of these places, the protection of raw fruits and vegetables from contamination by flies is important. In San Jose alone the screening of store fronts required the expenditure of large sums of money and provided work for carpenters during many weeks.

In bakeries and meat markets the sanitary inspector required the installation of good floors, the thorough cleaning of side walls and ceilings, the provision of a dressing room for workmen, clothing not being permitted in the work room of bakeries. In grocery stores, ham, bacon and cheese is kept under screens or other appropriate cover. The erstwhile open cracker-barrel is now closely covered. Dried fruits are protected and every possible precaution is taken to prevent the contamination of all grocery store products.

When it is considered that many of these establishments had not been renovated for a quarter of a century, some idea may be gained of the immense amount of work, and in some cases of the very large expenditures of money that were required. In every instance, however, the proprietors of these establishments complied willingly with the requirements of the inspectors, and in no case has there been any friction whatsoever in securing these improvements. In order that a comprehensive idea of the regulations may be gained, they are printed herewith. These regulations are based upon the regulations enforced by the United States Public Health Service and the United States Army in extra-cantonment zones throughout the country.

HOTEL, RESTAURANT AND EATING HOUSE REGULATIONS.

The various requirements of this regulation apply to hotels, restaurants, lunch counters, cafes, cafeterias, soda fountains, ice-cream parlors, soft-drink stands, and all other places, hereinafter called eating houses, where food is prepared for sale, sold, distributed, or displayed for sale. Food, as hereinafter used, includes all articles used for food, drink, confectionery, or condiment, and all articles used in the preparation thereof.

All owners, proprietors, or managers of eating houses shall keep up-to-date, accurate, and complete lists of all persons employed in said eating houses, indicating sex and color, and duties performed by each employee, and shall furnish copy of same to medical officer in charge, which copy must be kept constantly revised up-to-date by said owner, proprietor, or manager, and in constant agreement with all changes of personnel of employees.

No owner, proprietor, or manager shall require or permit any person to work, nor shall any person work, in any eating house who is affected with any venereal disease, smallpox, diphtheria, scarlet fever, yellow fever, tuberculosis, trachoma, typhoid fever, dysentery, measles, mumps, German measles, whooping cough, chickenpox, or any other infectious or contagious disease.

Every eating house shall be properly lighted, drained, plumbed, and ventilated, and conducted with strict regard to the influence of such conditions upon the health of the employees or other persons therein employed.

The floors, side walls, ceiling, furniture, receptacles, implements, and machinery of every eating house shall at all times be kept in a clean, healthful, and sanitary condition.

All food in the process of preparation, distribution, or display must be securely protected from flies, dust, dirt, and in so far as may be necessary by all reasonable means from all other foreign or injurious contamination.

All garbage, refuse, dirt, and waste products subject to decomposition or fermentation must be removed daily.

The clothing of all employees, clerks, and other persons therein employed must be kept clean.

The doors, windows, and other openings of every eating place, during such time as flies make, in the opinion of the medical officer in charge, such precaution necessary, shall be fitted with self-closing screen doors and wire window screens of not less than 14 mesh to the inch, which shall be close fitting and in good condition.

Every eating house shall have convenient and adequate toilet or toilet rooms separate and apart from the room or rooms where food is prepared, served or displayed. The floors in such toilet rooms shall be of good, nonabsorbent material, and shall be kept clean and in a sanitary condition. Said toilet or toilets shall be furnished with separate ventilating flues and shall be well lighted. They shall at all times be fly-tight and every reasonable precaution must be observed to prevent the access of animals which might spread excreta or other body discharges about the premises.

Lavatories and wash rooms shall be adjacent to or in toilet rooms and shall be supplied with running water, soap, and individual towels, and shall be maintained in a sanitary condition. All employees and others who handle food or the ingredients of its preparation shall, before beginning work or after visiting toilet or toilets, wash their hands and arms thoroughly.

Cuspidors for the use of employees and other persons shall be provided whenever necessary and each cuspidor shall be thoroughly emptied and washed daily with disinfectant solution, consisting of 5 per cent phenol or its equivalent, and shall be provided at all times with at least 5 ounces of such solution.

No persons or person shall be allowed to live or sleep or store articles used for this purpose in the kitchen, dining room, or any other room of an eating place where food is prepared, served, or displayed.

No owner, proprietor, or manager of an eating house shall provide or expose any toweling or similar article, except individual paper towels, for use of the public generally in any place under his control, or allow any towel or similar article to be so provided, exposed, or used there unless such towel has been laundered after each separate use.

All dishes, glasses, silver, and other implements used by customers shall be thoroughly washed in boiling water with soap, rinsed in clean water at the boiling temperature, and either dried with a clean towel or allowed to dry in such a place that they are protected from dirt and contamination.

All eating houses must be provided with running water in the kitchen, with the exception of those situated in areas absolutely unprovided with main line water supplies.

All straws used at soda fountains and soft-drink stands shall be kept in suitable containers to keep same in a sanitary, cleanly, and safe condition, with the ends protected from dust.

All bottled goods must be sold and served in the original containers, and straws must be inserted in the bottle for the customer's use. The contents of the bottle must not be poured into a glass.

All eating houses must have:

(*a*) A milk supply, where milk is served, which is approved.

(*b*) Water supply free from contamination.

(*c*) A sanitary method of sewage disposal.

The owner, proprietor, or manager of every eating house shall keep a copy of these regulations, to be furnished by the officer in charge, posted in a conspicuous place in his place of business.

REGULATIONS FOR BARBER SHOPS AND BILLIARD HALLS.

All barber shops shall be equipped with running hot and cold water and with all such appliances, furnishings, and materials as may be necessary to enable persons employed in and about said barber shop to comply with the requirements of this regulation, and the owners, proprietors, or managers of all barber shops, billiard halls and similar places shall keep their shops, furniture, tools, appliances, and equipment therein used in a sanitary condition at all times.

All combs, hair brushes, dusters, and other articles must be washed at frequent intervals, at least once a day, and shall be kept clean at all times. All mugs, shaving brushes, razors, scissors, pincers, needles, clippers and other instruments must be sterilized either by the use of an approved steam sterilizer, immersion in boiling water or in compound solution of cresol of 5 per cent strength after each separate use.

The blade of a razor which has been stropped during the operation of shaving a customer shall be immersed in compound cresol solution of not less than 5 per cent strength, and then wiped, before being again applied to the face of the customer.

No barber shall use for service of any customer any towel or wash cloth that has not been boiled or laundered since last used.

All barbers must wear, while serving customers, washable white coats.

Every barber shall clean his hands thoroughly immediately before serving each customer.

No barber shall, to stop the flow of blood, use alum or other material unless the same is applied as a powder and with a clean towel.

No barber shall permit any person to use the headrest of any barber chair under his control unless the headrest is covered by clean new paper or by a fresh, clean towel.

No person affected with any disease of the skin or scalp shall be shaved or have his hair cut in any barber shop.

No barber shop, billiard hall, or similar place shall be used as a sleeping room or dormitory. Floors must be kept free from hair at all times and must be swept and mopped daily, and all furniture and equipment must be kept free from hairs and dust.

No barber or other person in charge of a barber shop shall undertake to treat any disease of the skin.

Adequate cuspidors must be furnished in every barber shop, billiard hall, or similar place; said cuspidors shall be cleaned daily, shall be kept in a clean and sanitary condition, and shall be provided at all times with a disinfectant solution consisting of 5 per cent phenol or its equivalent.

All newspapers, magazines, and other reading material furnished to the public or left in the barber shop, billiard hall, or similar place shall be destroyed or removed at the end of each day.

No barber shall be allowed to remove the cut hairs from the face or neck of a customer by the process of blowing (*i. e.*, blowing through the lips); mechanical bellows or sanitary brush may be used.

The use of rubber collar protectors is hereby prohibited.

The owner, proprietor or manager of every barber shop, billiard hall, or similar place shall keep a copy of these regulations, to be furnished by the officer in charge, posted at all times in a conspicuous place in the place of business.

ALKALINE GLYCERIN AS A CAUSE OF SMALLPOX VACCINATION FAILURES.

JOHN N. FORCE, M.D., Gr.P.H.

Assistant Professor of Epidemiology, University of California; Consulting Epidemiologist, California State Board of Health, Berkeley, Cal.

This paper presents the results of an investigation of the cause of several failures following smallpox vaccination with virus from an establishment whose product had, in my hands, given 100 per cent of successful vaccinations during the three years ending June 30, 1917.

The investigation was made by direction of Doctor W. H. Kellogg, Secretary, California State Board of Health, and involved a study of twenty-five failures at an orphanage in San Jose, thirteen at a factory in San Francisco, and two at the University of California, Berkeley. In addition, the health officers of Berkeley and Oakland reported several failures in routine vaccinations conducted by their departments.

Failures at a San Jose Orphanage.

On December 27, 1917, Doctor Ryan, attending physician at the Home of Benevolence, vaccinated twenty-seven previously unvaccinated children at that institution. The vaccine had a potency expectancy of three weeks at the time of use. The vaccinations resulted in two abortive vaccinias and twenty-five complete failures. Doctor Ryan had purchased the vaccine from a retail drug store of San Jose which had received it from a San Francisco wholesale drug house on the day preceding its sale. The wholesale house had purchased several lots of vaccine from the producing establishment between its removal from the calf in October and its shipment to San Jose in December. These lots all bore the same product number and it was impossible to ascertain how long the San Jose shipment had been in the hands of the wholesaler. The situation was further complicated by the fact that the retailer was not sure from which of two wholesalers he had purchased the vaccine, and the producing establishment had made sales of this particular vaccine to both wholesalers. One of the wholesalers had no provision for proper storage of vaccine virus, the other claimed to have an ice box. It was assumed, therefore, that the vaccine had lost its potency through storage at room temperature in the wholesale establishment, or through two journeys in containers having no provision for maintaining a low temperature during transit.

Failures at a San Francisco Factory.

On February 16, 1918, I observed the results of 213 vaccinations performed five days previously by Doctor Curtis of the San Francisco Health Department. The vaccine used had been shipped directly from the producing establishment to the factory whose employees were the subjects of the vaccinations, and had been used on the day following its receipt. No provision had been made by the producing establishment for securing a low temperature for the vaccine during transit, but it was probably not more than three days from ice box to arm, and the potency expectancy at the time of use was forty days.

The accompanying table presents a classification of the results observed.

Results of Smallpox Vaccination of 213 Factory Employees.

	Primary vaccinia		Secondary vaccinia		Immediate reaction		Failures	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
Scar absent:								
Previously unvaccinated	15	75	1	5	0	0	4	20
Previously vaccinated	14	56	4	16	5	20	2	8
History of smallpox	1	25	0	0	2	50	1	25
Scar present	5	3	27	16	128	77	6	4

Considering the long potency expectancy of the vaccine and the short period in transit from manufacturing establishment to arm, these thirteen failures to react were entirely unexpected. Inspection of many of the primary vaccinias, however, showed numerous instances of breaks in the continuity of the vasicle area surrounding the healed insertion scratch. In some instances a few tiny circular vesicles were scattered along this tract instead of the single, full, ovoid vesicle completely encircling the scratch, which characterizes a vaccinia resulting from the incision method of vaccination. The appearance was exactly that produced by an old or otherwise partially impotent vaccine when tested at a producing establishment by the incision method of insertion into guinea pig scrotal tissue.

It was evident, therefore, that some deleterious influence other than storage at room temperature must be sought for as a cause for these failures.

Failures at the University of California.

On September 11, 1917, a student entering the university a month after the opening of the semester, was vaccinated with a vaccine which had been used with uniform success on entrants at the opening of the semester. The vaccine had a potency expectancy until the first week in November. The student had been vaccinated over ten years previously and presented an indistinct scar. No reaction resulted from this vaccination, nor from revaccination with the same vaccine on September 21 and November 16. The student was excused from further vaccination until the following semester when fresh vaccine would be provided for the entering class. Unfortunately she did not return to the university and therefore furnishes the first instance of failure in four years.

On February 12, 1918, another student, presenting an indistinct scar, failed to show a reaction when vaccinated with the same virus used on the San Francisco factory group. When no reaction resulted from revaccinations on February 20 and February 25, a fresh supply of vaccine with a potency expectancy of 70 days was secured and the student successfully vaccinated.

The vaccine used at the university is practically never removed from the ice and has been shown experimentally by Force and Stevens (1) to retain a high degree of potency after six months ice box storage. Failure of two vaccines iced practically from calf to arm, with a potency expectancy of sixty days in one case and thirty days in the other, confirmed the impression conveyed by the San Francisco factory experience. It was evident that the vaccine itself was at fault rather than the method of storage.

Effect of Alkaline Glycerin on Smallpox Vaccine.

When storage conditions are satisfactory, there remain two causes for loss of potency in smallpox vaccine. The first of these is the tendency of a given strain of the organism to run out after continued passage from calf to calf. Producers recognize this tendency and are continually adding fresh strains to the seed virus or increasing its virulence by retrovaccination to other animals.

The second cause of loss of potency is found in the chemical reaction of the 50 per cent aqueous solution of glycerin which is added to the vaccine before grinding. Copeman in his original experiments on glycerinated vaccine, used a glycerin characterized by ''absence of metallic contamination of any kind.'' French manufacturing establishments use a chemically pure, neutral glycerin. In the regulations of the U. S. Public Health Service for the manufacture of smallpox vaccine, ''glycerin of first quality'' is specified. Glycerin, U.S.P. ''in aqueous solutions must be neutral to litmus paper.'' Barringer (2) has recently shown the effect of alkaline glycerin on smallpox vaccine in the following experiment:

Vaccine pulp was collected from a calf and divided into two portions. One portion was ground in C.P. neutral glycerin, the other ground in a glycerin sold as C.P. but whose H-ion concentration was below 7.0, *i.e.* on the alkaline side of absolute neutrality. After thirty days storage in the ice box, the two portions were tested by the scrotal vaccination of guinea pigs. The vesicles produced by the vaccine ground with alkaline glycerin were distinctly inferior to those produced by the vaccine ground with neutral glycerin. The two lots of vaccine were then allowed to remain at room temperature for thirty days and the scrotal vaccination repeated. The vaccine ground with alkaline glycerin produced no results, while fair results were still obtained from the vaccine ground with neutral glycerin.

A sufficient cause for failure of smallpox vaccine is, therefore, to be found in the use of alkaline glycerin in its preparation. The glycerin used in the preparation of the vaccine responsible for the failures herein reported was found on test by the producing establishment to be alkaline in reaction.

Discussion.

Smallpox is on the increase in this state and can only be controlled by vaccination. Successful vaccination depends on the use of potent vaccine. A supply of potent vaccine will not be available for protection of the public health unless the producer, the retail dealer, the vaccinator, and the State Board of Health realize and assume their several responsibilities.

Responsibility of the Producer: 1. The producer of smallpox vaccine should use only chemically pure neutral glycerin, confirming the neutrality by test before mixing with the vaccine pulp. Owing to the tremendous demand for glycerin, the imported supply, formerly much used in this country, has been placed under an embargo. There is, therefore, a sudden strain on the capacity of American plants which has resulted in an output of glycerin not up to the standard necessary for vaccine production. 2. The producer is also responsible for the protection of vaccine from deterioration in transit. Some producers ship from the establishment in specially constructed iced containers, but this precaution is of little avail if the vaccine is kept at room temperature by the wholesale or retail dealer.

Responsibility of the Retail Dealer: 1. The retail dealer should invariably order directly from the manufacturer and should avoid over-stocking. 2. He should provide suitable ice box facilities. Many dealers state that they ice their biologic products in summer but not in winter, forgetful that a steam heated store does not represent winter temperatures. This has been well expressed in a recent trade circular: "Dealers generally depend upon branch houses and jobbers for supplies. These sources rarely *ice* their stocks so what avail is it for the dealer to place the goods in a refrigerator after he receives them? Manufacturers not infrequently, for competitive or advertising purposes, prevail upon druggists to stock such products knowing full well that anywhere from 60 to 90 per cent of the goods will be returned for repeated exchange or credit. This unnecessary duplication of stocks gives rise to a terrific economic waste which inevitably increases the costs of production with consequent advance in price to the consumer."

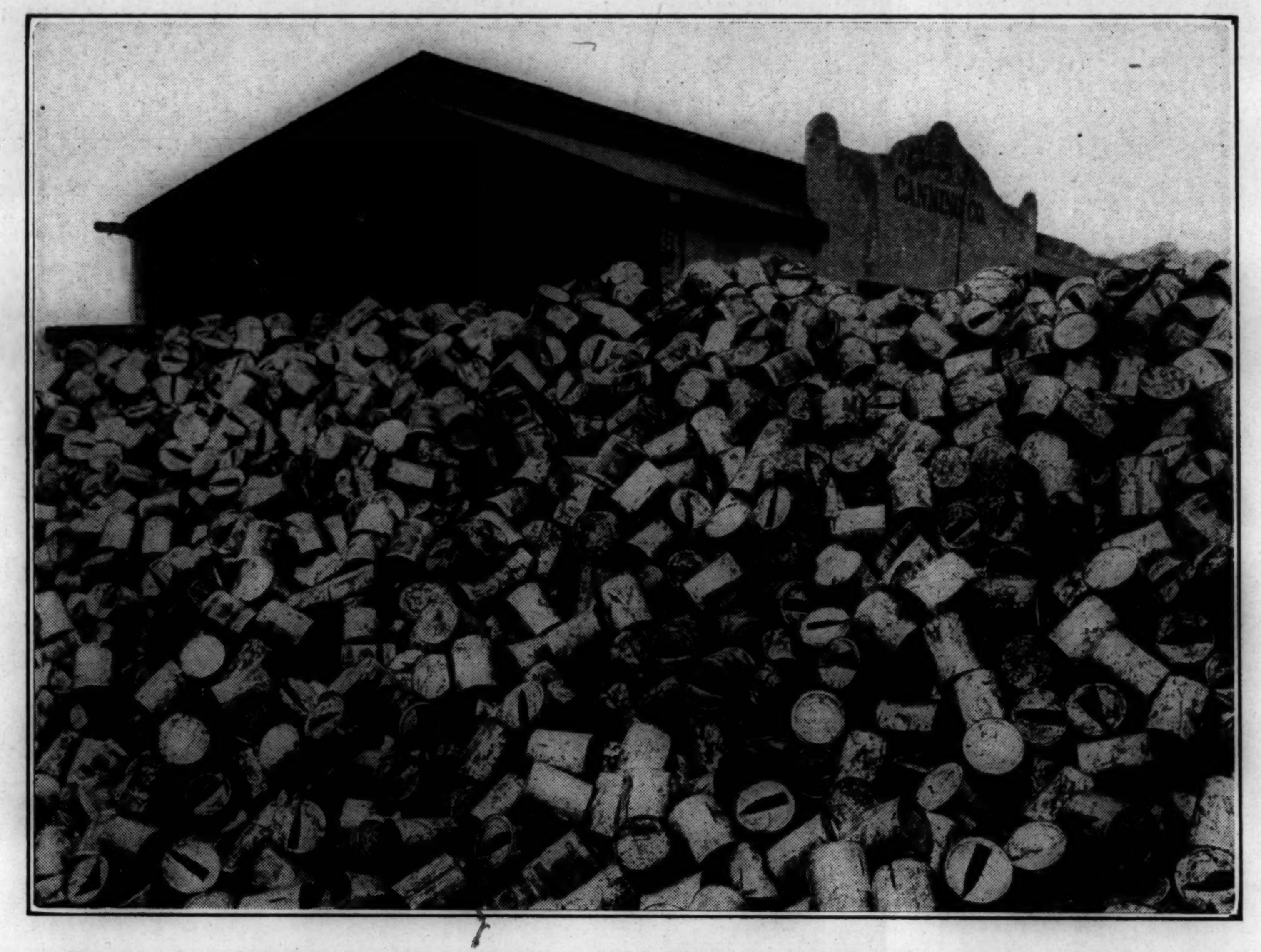
Responsibility of the Vaccinator: 1. The vaccinator should use an approved modern technique in order to avoid infection. 2. He should be familiar with the three manifestations of successful vaccination; primary vaccinia, secondary vaccinia, and the immediate reaction. 3. *He should insist on a vaccine which will give 100 per cent of vesicle formation in previously unvaccinated subjects.* During the three years ending June 30, 1917, this record has been maintained at the University of California. 4. He should *never* issue a certificate that he can not successfully vaccinate any person. If the person has an old scar he should not assume immunity until he secures one of the three reactions, but on the other hand he should not waste time vaccinating a person who has shown an immediate reaction. If he fails to secure a reaction in a person showing no scar, the vaccine is probably at fault, provided, however, that the vaccinator has planted the vaccine on the exposed derma. In the last three years 620 persons entering the University of California gave histories of one or more vaccinations but showed no scars. Vaccination of these persons resulted in only ten immediate reactions, indicating complete immunity; and six secondary vaccinias, indicating partial immunity. The remaining 610 resulted in primary vaccinias. 5. The vaccinator should, as far as possible, confine his routine vaccinations to certain seasons, *e.g.*, the opening of school terms, thus cooperating with the retailer in securing a sufficient stock of vaccine at these times and avoiding overstocking at others. 6. He should know that the expiration date stamped on a package of vaccine is no index of the potency of an improperly stored product.

References.

1. Force and Stevens. The Responsibility of the Vaccinator in Overcoming the Rational Objections to Smallpox Vaccination.—Jour. Lab. and Clin. Med., 1918, iii, 220.
2. Barringer. Personal communication to the author.

CONDEMNATION OF FOOD PRODUCTS.

Some canneries in California have been violating the pure food laws by using decayed tomatoes in the manufacture of tomato puree. Some of these violations have been particularly flagrant since they occurred in canneries having contracts for supplying these products to the government. The lot of condemned tomatoes pictured above consists of 36,000 gallon cases. The cans alone made a pile 80 feet long, 35 feet wide and 12 feet high. The lot condemned represented a value of $15,000.


Part of a lot of tomato puree, consisting of 36,000 one-gallon cases, condemned by the California State Board of Health. Several more lots of this material, equally large, have also been condemned and destroyed. This procedure was necessary because decayed tomatoes were used in the manufacture of these products.

Quantities of this product of similar size were also condemned in other parts of the state. These violations have occurred in San Diego, San Jose and San Francisco. The condemnation of tomato products manufactured of decayed fruit is part of an aggressive campaign conducted by the Bureau of Foods and Drugs of the State Board of Health. The board is determined that all California products for use in the army and navy must absolutely conform to the food laws.

TUBERCULOSIS IN CALIFORNIA STATE PRISONS.

L. L. STARLEY, M.D., Resident Physician, San Quentin.

My personal experience with San Quentin began in February, 1913, at which time the appointment was given me as Assistant Resident Physician. If the surgical equipment was designated as being crude, the care of the tuberculous was primitive, even worse than crude.

At this time there were about twenty patients with active tuberculosis, treated, or rather, housed, in two small rooms on the top floor of the so-called "Old Hospital," which was built in 1859. The ventilation was abominable, the beds were crowded together, air space was extremely limited, a few old-fashioned windows, low and narrow, let in a very little light. The walls were of a dark hue, making the rooms cheerless and foreboding. Whites, Negroes and Indians commingled here indiscriminately. The surroundings were extremely sordid. Here, crowded in abject misery, lacking the essentials for cure—light and air—were these diseased prisoners, coughing, and too enfeebled for the most part, to leave their beds. To add to their discomfort, a dilapidated toilet and insanitary bath were screened off in one corner by a shell of a partition, while in the center of the room, a coal stove gave to those men who were able, the opportunity to cook the rations of eggs, or other food, which were allotted. These prisoners were visited about once a week by the Resident Physician, although an inmate doctor stayed in this ward most of the time and ministered to the men as best he could.

The so-called "New Hospital" was a hospital in name only, for the wards were dark, there was no equipment worthy of the name, and one large room on the ground floor served the purpose of a dental office, surgery, dressing room, clerk's office, and general utility room.

The sanitation of the prison was good, however, for the most part, although the cells were overcrowded and one large room on the top floor of the furniture factory served as a dormitory for about 100 men. No satisfactory ventilation was provided for the cells. The new prison of modern construction had not yet been completed.

Only a few men were kept locked up all the time, there being the so-called "incorrigibles," about ten in number, who were kept in small wooden cells well guarded, for periods varying from six months to years.

After my appointment as resident physician in August, 1913, free hand was given me in the hospital management, and I was enabled to bring before Warden Hoyle a large number of recommendations for the improvement of the hospital facilities. The warden approved these plans, but resigned his office before any of them could be acted upon.

J. A. Johnston became warden, and with his appointment came aid unbounded to the medical department. He had held similar position at Folsom prison for some time, and had become thoroughly convinced of the importance of health measures in prison management. With his arrival a "renaissance," or awakening, took place. He believed that it is useless to attempt to reform a man morally or mentally, until his physical condition is attended to.

Of course, the tuberculosis problem was the first to be attacked, as its importance was of the greatest. To have continued the old tuberculosis ward would have been a crime. Accordingly, a modern open air tuberculosis hospital was built on the flat roofs of the "Old Hospital" and Library building, which joins the "New Hospital." It covers an area of 4,800 square feet, and is arranged in the form of two adjacent quadrangles, with concrete-floored courts in the center. Surrounding these courts are the sheltered wards, enclosed by many sliding windows on the outside, and French windows and doors into the courts. In these wards are high iron beds, with sufficient sheets and blankets as well as a canvas spread. Near each bed is a stand.

The whole structure is electrically lighted, has modern plumbing with shower baths, toilets and lavatories. On summer days the wards may be thrown entirely open, allowing plenty of sunshine and air constantly to fill the place. Valuable suggestions, encouragement, and help in building the hospital were given by Drs. G. R. Hubbell, R. A. Peers, L. S. Mace and many others interested in this problem.

Even before this open air hospital had been completed, the medical department had begun to make a thorough physical examination of every man who came to prison, in addition to examining cases which appeared to be possibly tuberculous, among the older prisoners. In this way many cases of tuberculosis were discovered as soon as the man entered prison, and many were found among the older prisoners. With this system, instead of having twenty cases under treatment the number grew until the hospital designed for sixty prisoners was nearly full. As soon as a prisoner is suspected of having tuberculosis, he is immediately placed in the medical ward, where examination is made, sputum tested, temperature chart kept, X-ray pictures taken, and other means employed to make the diagnosis.

Because of the good facilities for caring for tuberculous patients at San Quentin, the Board of Prison Directors in 1915, decided to send all afflicted prisoners from Folsom to this place for care and treatment. About forty have been transferred during the past three years.

Early in his administration, Warden Johnston abolished the solitary confinement of incorrigibles, and at the present time no man is kept shut away in a cell for a long period of time. As a light on what close confinement may do, it is worthy to note that of the dozen or so incorrigibles confined after the riot in 1911, two of them developed tuberculosis, one dying, and the others making a good recovery after treatment in the open air hospital.

The general sanitation of the prison has been improved in the past few years. Eight hundred single cells, of modern construction, have been built. The cells in the old prison have been equipped with fan ventilation, which pumps 28 cubic feet of air per minute into each of them. Electric lights have replaced the old air-consuming oil lamps. Various suction devices have been installed in the furniture factory to draw away offending dust.

The treatment accorded the patients suffering from tuberculosis has been, for the most part, that of rest, air, sunshine and food, although Dr. Hubbell, who formerly visited this prison weekly, administered tuberculin with satisfactory results. On selected cases, artificial pneumothorax has been a therapeutic agent, and some cases have responded favorably.

Although the prison population is increasing, the morbidity is on the decrease, and the death rate from tuberculosis is less than in former years. The death rate from tuberculosis at Folsom is nil, because such cases are sent here, while at San Quentin the death rate is much lower than it was in former years. The progress in combating this disease in the past five years is encouraging, and shows what can be done if effort is expended.

MORE MEDICAL MEN NEEDED IN THE ARMY.

The following letter from Surgeon General Gorgas of the U. S. Army, emphasizes "the supreme demand for medical officers":

WAR DEPARTMENT.
OFFICE OF THE SURGEON GENERAL.
WASHINGTON, April 8, 1918.

From: The Surgeon General.
To: Editor, California State Board of Health Monthly Bulletin, Sacramento, Cal.
Subject: Medical Reserve Corps.

1. I wish to call to the attention of the profession at large the urgent need of additional medical officers. As the war progresses the need for additional officers becomes each day more and more apparent. Although the medical profession of the country has responded as has no other profession, future response must be greater and greater. The department has almost reached the limit of medical officers available for assignment.

2. I am, therefore, appealing to you to bring to the attention of the medical profession at large the necessity for additional volunteers. So far the United States has been involved only in the preparatory phase of this war. We are now about to enter upon the active, or the fighting phase, a phase which will make enormous demands upon the resources of the country. The conservation of these resources, especially that of man-power, depends entirely upon an adequate medical service. The morning papers publish a statement that by the end of the year a million and a half of men will be in France. Fifteen thousand medical officers will be required for that army alone. There are today on active duty 15,174 officers of the Medical Reserve Corps.

3. Within the next two or three months the second draft will be made, to be followed by other drafts, each of which will require its proportionate number of medical officers. There are at this time on the available list of the Reserve Corps an insufficient number of officers to meet the demands of this draft.

4. I can not emphasize too strongly the supreme demand for medical officers. Will you give the department your assistance in obtaining these officers? It is not now a question of a few hundred medical men volunteering for service, but it is a question of the mobilization of the profession that in the large centers of population and at other convenient points as well as at all army camps and cantonments, boards of officers have been convened for the purpose of examining candidates for commission in the Medical Reserve Corps of the Army. An applicant for the Reserve should apply to the board nearest his home.

5. The requirements for commission in the Medical Reserve Corps are that the applicant be a male citizen of the United States, a graduate of a reputable school of medicine, authorized to confer the degree of M.D., between the ages of 22 and 55 years of age, and professionally, morally and physically qualified for service.

6. With deep appreciation of any service you may be able to render the department, I am,

W. C. GORGAS,
Surgeon General, U. S. Army.

APRIL MEETING OF THE STATE BOARD OF HEALTH.

The State Board of Health met in Sacramento on April 6, 1918. The members present were: Dr. George E. Ebright, president; Dr. F. F. Gundrum, vice president; Dr. Edward F. Glaser, Dr. Adelaide Brown, and Dr. W. H. Kellogg, secretary.

A communication was read from Dr. D. W. Montgomery of San Francisco suggesting the conservation of lard by the use of petrolatum in its stead in the manufacture of pharmaceutical products. It appeared that a very definite saving of fat would result in the following out of this suggestion, and it was the sense of the Board that physicians should aid in its conservation by the acceptance of the substitute in such products as zinc oxide ointment.

Dr. W. C. Billings of the United States Public Health Service and medical officer in charge of the plague eradicative work in California, appeared at the meeting and stated that he had received word from the Surgeon General that the government's appropriation for this work in California would be reduced on May 1 to a sum which would practically mean the discontinuance of this work unless the state saw fit to replace the loss by a special appropriation.

The Director of the Bureau of Registration of Nurses presented an outline of changes to be made in the schedule of studies required in training schools for nurses. The demands of the army for nurses are such as to make it absolutely necessary that all means possible be adopted to facilitate the training of nurses and increase the output of schools for nursing. The requirement adopted in April, 1916, providing that applicants must present evidence of having completed a four-year course in an accredited high school, or other institution of standard secondary grade, was modified so that the theoretical preparatory course may be obtained in an accredited college, junior college, high school or in a private school of approved secondary standing or in a school of nursing, and that this portion of the course must include the required subjects of chemistry, one unit, biology and physiology, one unit, nutrition and cookery, one to two units. This preparatory training will carry a weight of six months credit on the three-year course. The professional training, however, must be obtained in an accredited hospital or hospitals or institution for the care of the sick approved by the State Board of Health, and shall consist of experience in medical, surgical, obstetrical patients and of sick children. It was further decided that graduates with a degree of a recognized university will be given credit of one year.

A large number of successful contestants in the recent examination for the title of "Registered Nurse" was presented by the Director. By resolution the title was conferred upon them.

A resolution was passed to the effect that the Board of Health recognize the right of women to compete with men in any examinations for State District Health Officer which may be held.

Dr. Irvine, Director of the Bureau of Venereal Diseases, made his last appearance before the board, presenting his resignation as Director of the bureau, which action he had taken in accordance with his original program of serving in that capacity only temporarily, as he is to return to Minnesota where he will take charge of the new Bureau of Venereal Diseases under the Board of Health of that state.

Upon the recommendation of the Director of the Bureau of Sanitary Engineering, several temporary permits for the operation of swimming pools in various parts of the state were granted. A set of regulations governing the use of sewage for the irrigation of garden products was adopted. In brief, these forbid the use of raw sewage septic or Imhoff tank effluents or similar sewages for the irrigation of vegetables or fruits which may be eaten in the raw state, and defining conditions under which the use of such sewage may be used in other cases.

There was present the usual number of persons cited to appear before the board for violation of the Food and Drug Law, a full hearing being given in each case before decisions regarding future action were made.

W. H. KELLOGG,
Secretary.

REPORT OF THE BUREAU OF ADMINISTRATION FOR MARCH, 1918.

W. H. KELLOGG, M.D., Director.

Activities of the State District Health Officers.

North Coast District.

ALLEN F. GILLIHAN, M.D., State District Health Officer, Santa Rosa.

During March Dr. Gillihan visited Benicia, Petaluma, Napa, Veterans' Home at Yountville and St. Helena; he also made an inspection of Witter Springs Resort, in Lake County.

Northern District.

HAROLD F. GRAY, Gr. P.H., State District Health Officer, Chico

Mr. Gray visited the following places during March: Corning, Red Bluff, Willows, Grass Valley, Nevada City, Marysville, Sacramento, Chico, Colusa, Stoneyford and Nord. Mr. Gray gave an address at Red Bluff on health problems; also had many conferences with the health officers in the cities he visited.

Central Coast District.

R. N. HOYT, State District Health Officer, San Jose.

During March Mr. Hoyt continued his inspection work in San Jose, Sunnyvale, Redwood City, Menlo Park, Camp Fremont and Palo Alto. He also inspected the schools near San Jose. Mr. Hoyt also had a conference with Dr. Irvine, Director of the Bureau of Venereal Diseases, San Francisco.

Central District.

RALPH W. NAUSS, M.D., State District Health Officer, Fresno.

Dr. Nauss during March visited the County Hospital at Fresno; had conferences with the Directors of the Bureaus of Sanitary Engineering in Berkeley and Venereal Disease in San Francisco. He also visited the cities of Tracy, Modesto, Manteca, Hanford, Lemoore and Stockton. An investigation into smallpox at Tulare was also made.

South Coast District.

EDWARD D. WARD, M.D., State District Health Officer, 210 Union League Building, Los Angeles.

During March Dr. Ward visited Santa Ana, Pomona, Azusa, Glendora, and San Pedro. Dr. Ward also made many conferences with the health officers in his district.

Southern District.

E. A. INGHAM, State District Health Officer, Riverside.

Mr. Ingham made a trip to Los Angeles to take up health matters with the State Board of Health branch bureaus. He also visited Hemet, Elsinore and Blythe. Mr. Ingham also continued his work in Riverside in connection with the new aviation camp to be located at Alessandro.

MORBIDITY REPORTS.

GUY P. JONES, Morbidity Statistician.

Morbidity for March, 1918, by Weeks.

	Week ending—				Total March, 1918	Total March, 1917
	Mar. 9	Mar. 16	Mar. 23	Mar. 30		
Anthrax	-------	-------	-------	-------	-------	-------
Beri-beri	-------	-------	-------	1	1	-------
Cerebrospinal meningitis	6	6	7	13	32	6
Chickenpox	248	188	166	125	727	942
Cholera, Asiatic	-------	-------	-------	-------	-------	-------
Dengue	-------	-------	-------	-------	-------	-------
Diphtheria	72	70	85	68	295	195
Dysentery	1	1	-------	1	3	-------
Erysipelas	9	12	15	27	63	69
German measles	781	413	458	453	2,105	54
Glanders	-------	-------	-------	1	1	-------
Gonococcus infection	108	111	70	63	352	118
Hookworm	6	-------	-------	-------	6	3
Leprosy	1	-------	2	1	4	3
Malaria	9	3	7	2	21	22
Measles	1,277	1,626	1,351	1,019	5,273	3,868
Mumps	329	421	315	187	1,252	1,028
Ophthalmia neonatorum	-------	2	-------	-------	2	2
Paratyphoid	-------	-------	-------	-------	-------	-------
Pellagra	1	1	-------	-------	2	2
Pneumonia	134	70	68	91	363	181
Plague	-------	-------	-------	-------	-------	-------
Poliomyelitis	2	-------	1	1	4	4
Rabies	-------	-------	-------	-------	-------	-------
Rocky Mountain spotted fever	-------	-------	-------	-------	-------	-------
Scarlet fever	100	96	90	93	379	535
Smallpox	40	22	31	14	107	62
Syphilis	97	101	64	57	319	113
Tetanus	-------	-------	-------	-------	-------	2
Trachoma	7	2	2	1	12	24
Trichinosis	-------	-------	-------	-------	-------	19
Tuberculosis	144	152	144	139	579	592
Typhus fever	-------	-------	-------	-------	-------	-------
Typhoid fever	18	12	14	18	62	61
Whooping cough	105	119	136	129	489	168
Yellow fever	-------	-------	-------	-------	-------	-------
Totals	3,495	3,428	3,026	2,504	12,453	8,073

SANITARY INSPECTIONS.

EDWARD T. ROSS, Sanitary Inspector.

During the month of March, sanitary surveys were made of Palo Alto, Redwood City, Mayfield, Menlo Park and adjacent territory. These surveys included the inspection of food supply places, ice cream and soft drink parlors, hotels, creameries, bakeries, meat markets, barber shops, billiard halls, laundries, stables, and public and private premises. The army officials at Camp Fremont, co-operated in every possible way in this work and a representative of their sanitary department was present and assisted in making all inspections. The local health officers and supervisors of San Mateo County also assisted in the work. When reinspections were made of food supply places, barber shops, etc., and it was found that all improvements recommended had been made, a certificate, indicating that sanitary conditions were satisfactory, and permitting men in uniform to patronize such establishments, was issued by the Army Sanitary Inspector, to owners, thereof. Good progress was made in this work and in practically all places reinspected a certificate was issued.

Miscellaneous complaints relative to insanitary conditions in various localities were investigated and a number of sanitary reports covering river steamers, slaughter houses, sewage disposal systems, etc., were submitted.

Summary of Operations (incomplete).

Sanitary surveys of cities and towns	4
Premises inspected	243
Reinspections made	364
Nuisances abated	725
Restaurants inspected	26
Ice cream and soft drink parlors inspected	27
Barber shops and billiard halls inspected	27
Groceries, fruit and vegetable markets inspected	30
Meat markets inspected	12
Bakeries inspected	8
Hotels and rooming houses inspected	16
Dairies and creameries inspected	7
Stables inspected	12
Laundries inspected	6
Public and private premises inspected	80
Food supply places screened against flies, etc.	118
Screen or glass food containers provided	264
Sterilizing outfits installed in restaurants, barber shops, etc.	80
Toilets installed in food supply places	9
Toilets screened	128
New floors installed in restaurant kitchens and bake shops	9
Metal garbage cans installed	133
Yards cleaned	130
Sanitary certificates issued	138
Sanitary reports submitted	10

REPORT OF THE BUREAU OF COMMUNICABLE DISEASES FOR MARCH, 1918.

Frank L. Kelly, M.D., Gr.P.H., Acting Director.

Type Diagnosis of Lobar Pneumonia.

Investigations carried on at the Rockefeller Institute for Medical Research by Avery, Chickering, Cole and Dochez have shown that acute lobar pneumonia is caused by four different strains or types of pneumococci. These investigators have shown that Type IV, the organism usually found in the mouths of normal persons not in contact with a case of pneumonia, is responsible for only about one-quarter of the cases of pneumonia. On the other hand, the Type I organism, which is responsible for about one-third of all cases of pneumonia, is found in only about 1 per cent of the normal persons carrying pneumococci.

It is a happy coincidence that the infection responding most readily to serum treatment is caused by the Type I organism, which is responsible for the highest number of cases. The value of serum treatment in infections caused by the other types of pneumococci is questionable. In pneumonia, as in the serum treatment of any infectious disease, the earlier the diagnosis is made and serum administered the better the patient's chances for recovery. As the serum treatment of pneumonia depends on using the immune serum of the same type as the organism causing the infection and as polyvalent sera are of little or no value, the laboratory diagnosis of pneumonia is essential to its rational treatment.

Through the courtesy of the Rockefeller Institute this laboratory will be supplied with diagnostic sera. We are now in a position to make a diagnosis of the type of pneumococcus causing the infection in a case of acute lobar pneumonia and will be glad to receive specimens for this examination.

The following directions should be carefully followed in collecting specimens of sputum: The specimen should be obtained from the deeper air passages and be as free as possible from saliva. It should be collected in a sterile container, such as one of the state containers for sending in specimens for examination of tuberculous sputum, and it should be sent to the laboratory *immediately* (preferably by special delivery). All specimens should be sent to the main laboratory at Berkeley and the physicians should be careful to designate that it is to be examined for pneumococci, so that it will not be confused with tuberculous specimens.

Division of Biological Examinations.

Summary of Examinations Made in the California State Hygienic Laboratory During the Month of March, 1918.

Condition suspected	Positive	Negative	Inconclusive	Total
Main laboratory at Berkeley—				
Anthrax	1	4		5
Diphtheria (diagnosis)	33	138	2 *10	183
Diphtheria (release)	54	213	1 *12	280
Diphtheria (school investigations)†	26	175	*2	203
Gonococcus infection	29	30	15	74
Leprosy	1			1
Malaria		6		6
Rabies	1	8		9
Syphilis (Wassermann test)	74	764	32	870
Tuberculosis (sputum examinations)	18	35		53
Typhoid (Widal test)	5	23	4	32
Typhoid (excreta)	2	2		4
Miscellaneous				10
				1,730
Northern branch at Sacramento—				
Diphtheria (diagnosis)	3	26		29
Diphtheria (release)	2	2		4
Malaria		5		5
Tuberculosis (sputum examinations)	12	29		41
Typhoid (Widal test)		14	2	16
				95
Southern branch at Los Angeles—				
Anthrax		1		1
Diphtheria (diagnosis)	17	102	3	122
Diphtheria (release)	42	49		91
Gonococcus infection	5	3		8
Meningitis	3			3
Tuberculosis	9	20		29
Typhoid (Widal test)	3	11	1	15
Typhoid (excreta)		1		1
Paratyphoid			1	1
Miscellaneous				4
Water				75
				350
Total number of examinations				2,175

*No growth.

†Cultures taken from school children at Soledad, 99, and Willits, 104.

Division of Epidemiological Investigations.

Epidemiological Investigations and Other Special Investigations During March, 1918.

Main laboratory at Berkeley—

An investigation of typhoid fever at San Dimas.

An investigation of cases of smallpox in Oakland.

Division of Preventive Therapeutics.

Pasteur Treatment for the Prevention of Rabies by the State Hygienic Laboratory During the Month of March, 1918.

	Treatment commenced	Treatment completed
Main laboratory at Berkeley	0	0
Northern branch at Sacramento	0	0
Southern branch at Los Angeles	0	0
Laboratory of Sacramento Board of Health, by deputized bacteriologist	0	0
Laboratory of San Francisco Board of Health, by deputized bacteriologist	0	0
Laboratory of Los Angeles Board of Health, by deputized bacteriologist	0	0
Laboratory of San Diego City Board of Health, by deputized bacteriologist	0	0
Laboratory of Letterman General Hospital, Presidio, by deputized bacteriologist	0	0
Laboratory of United States Naval Hospital, Mare Island, by deputized bacteriologist	0	0
	0	0

Vaccine for the Prevention of Typhoid Fever Issued by the State Hygienic Laboratory During the Month of March, 1918.

Number of physicians to whom vaccine was sent	3
Number of complete treatments sent	97

Ophthalmia Neonatorum Prophylactic Outfits Distributed During the Month of March, 1918.

Number of outfits, containing two ampoules each, issued	250

Public Health Instruction.

Participation in Instruction in Public Health During March, 1918.

Main laboratory at Berkeley—	
Bacteriological instruction outfits sent out	1
Bacteriological instruction outfits in use	24

BIOLOGICAL DIVISION.

William W. Court, Ph.D., Acting Consulting Biologist.

During the month of March the hookworm survey of Amador County was practically completed. The work will next be taken up in the Grass Valley region of Nevada County. It will be necessary, however, to return from time to time to Amador County to obtain samples from new men entering the mines, and to check up all treatments and re-examinations.

During the month Dr. J. F. Worley of the Bureau of Mines Car No. 1 made arrangements for the sending in of samples from a number of the copper mines in Shasta County. It is planned to make a preliminary survey of this region to see if hookworm has spread into the copper mines.

Unsettled conditions of labor in the mining regions of the state are increasing the difficulties in the hookworm work. The men are shifting very rapidly and some of the larger mines in Amador County lose as many as ten or a dozen men a day and take on a like number. These changes make it very difficult to keep track of the men during the process of examination and treatment for hookworm, and make it almost impossible to complete the survey of any particular mine. The unsettled conditions also increase the danger of the spread of hookworm since men are constantly moving from infected regions to all parts of the state.

The Biological Division is attempting to obtain case records of Oriental diseases in California. Some interesting statistics have already been compiled. Physicians in the state are asked to send in case records of protozoan dysenteries, schistosomiasis, hookworm, paragonimiasis, or other Oriental or tropical parasitic diseases.

Summary of Examinations Made in the Biological Laboratory of the State Board of Health During the Month of March.

	Positive	Negative	Inconclusive	Total
Hookworm	72	316	0	388
Reexaminations after treatment for hookworm	9	7	0	16
Total examinations	81	323	0	404

REPORT OF THE BUREAU OF VENEREAL DISEASES FOR MARCH, 1918.

H. G. Irvine, M.D., Director.

Work in the South.

During March the director made an extended trip to San Diego and Los Angeles. In San Diego arrangements were made for Dr. Ophüls to give supplemental lectures on venereal diseases at the Naval Training Station. In this connection the director met Captain Brotherton, the commandant, and Dr. Bucher, senior surgeon. Both men were enthusiastic about the type of man now in service and were more than anxious to have the co-operation of the bureau in this educational work.

A visit was made to North Island to the Army Aviation School for a conference with Major Ream regarding educational work. Major Ream has been appointed an accredited lecturer by the Commissioner on Training Camp Activities and will take care of lecture work at his own station, as well as at Fort Rosecrans and Calexico.

At the invitation of the San Diego Civic Center, Dr. Irvine gave an address at their regular monthly meeting at the Grant Hotel March 15th. About 250 were in attendance and much interest was shown in the work of the bureau. Colonel Murray, Division Surgeon at Camp Kearny, also spoke briefly.

The following day Dr. Irvine had a conference at the camp with Colonel Murray and Captain Banks and discussed with them the educational work; both men were enthusiastic over the stereomotograph and believe it one of the most successful methods adopted. For a number of weeks Camp Kearny has had one of the lowest venereal disease rates of any camp in the country.

San Diego's new detention hospital, the Mission Valley Hospital, opened March 12th and at the time of Dr. Irvine's visit had six patients to start with. Dr. Martha Welpton has been busily engaged in completing arrangements for equipment, supplies, etc., and there is no question of the success of the institution. Miss Lynne has had several conferences regarding the social service and educational work for the hospital and the local people will see that everything necessary is provided.

In Los Angeles a part of one day was spent at the Los Feliz Hospital. Some very interesting records are being made here concerning the sociological history of these women patients, and much valuable data will be collected. Everything is going on smoothly and the entire staff seems to be extremely interested in the work. Conferences were arranged with Dr. Winters and Dr. Pomeroy concerning the work in the jails and throughout the county.

Dr. Powers, the local health officer, is now working on plans for a new pavilion at Los Feliz which may be used for more beds as an emergency and later as a building for vocational training work.

Work at Bakersfield.

On March 7th Dr. Irvine attended a meeting of all the city and county officials and gave a talk on venereal diseases and the program for their control. Later conferences were had with Mr. Dorsey, district attorney, Dr. Morris, health officer, Dr. Cuneo, city health officer, the chief of police and the board of supervisors to work on plans for Bakersfield. A visit was made to the county hospital with Dr. McNamara. Arrangements were made to put the program into force, isolation to be made at the county hospital after examinations by the health department. It is also planned to give Dr. McNamara an assistant who will take charge of venereal disease cases at the hospital.

A subsequent visit was made on March 14th-19th by Dr. Watters, in order to have these plans ratified by the board of supervisors. It is hoped by April 1st that Dr. McNamara's assistant will be appointed and that he will be sent to one of the larger cities where intensive work is being done in caring for patients infected with venereal diseases. The board of supervisors has approved of this.

Stockton's Program.

On March 21st Dr. Nauss and Dr. Watters addressed the Civic Center of Stockton in an effort to interest the women of Stockton in the formation of a clinic for the treatment of venereal diseases. No plans have been made in this city and the mayor states that there are no funds available. Not only is the venereal disease clinic a necessity in Stockton but also there should be formed a clinic to care for all the illnesses of the poor. The physicians are willing to aid and there must be some way provided to start the work.

On March 29th the director addressed the San Joaquin County Medical Society on the subject of venereal disease control in California. The meeting was held at the Stockton State Hospital and was attended by physicians and by a group of nurses from the institution.

Meeting at Riverside.

On March 11th Dr. Dickie, in company with Dr. Milbank Johnson of the California Military Welfare Commissions, addressed the Riverside County Medical Society to bring before the physicians of the county the necessity of their co-operation in the control of venereal diseases. Riverside is to take an active part in these measures because of the formation of an aviation camp at that place. The medical society adopted unanimously the following resolutions:

1. *Resolved,* That it be the sense of this meeting that the Riverside County Medical Society undertake to establish a free clinic for the treatment of venereal diseases and that a committee of three be appointed by the chair to take the matter up actively and do all they can to establish such clinic, formulating regulations, securing volunteers among the physicians and obtaining a location.
2. *Resolved,* That it be the sense of this meeting that we recommend that our city regulations should cover the appointment of a sanitary inspector, and that the police department be augmented by appointment of sufficient policewomen. Also that the proper ordinances be passed to meet the problems which have arisen.
3. *Resolved,* That a committee of three be appointed by the chair to use their best efforts to determine where a hospital of the character needed for this work could be located and plan such regulations, etc., as may be needed to carry out this project.

Fresno Does Good Work.

On March 6th Dr. Irvine visited Fresno. He was much interested in the excellent work being done by Dr. Morgan at the county hospital. Dr. Morgan has records of 35 cases which are under treatment there for venereal disease. He is greatly aided by his nurse and social worker, Miss Ida McCune. The plans for the new City Clinic in Fresno have materialized and work is beginning there in earnest. The bureau is especially pleased with the interest which the people of Fresno are manifesting in this movement.

San Francisco Activities.

Another habeas corpus proceeding was instituted on March 9th; the plaintiff had been committed to the San Francisco Hospital for the treatment of venereal disease. The case was dismissed and the woman held under quarantine.

Dr. Hassler, San Francisco health officer, has prepared a new budget which provides for an out-patient department in connection with the San Francisco Hospital, having an adequate social service department to care for patients with venereal disease. This budget also provides for the maintenance of a special ward in the hospital for the treatment of those cases which are not ambulatory. The budget also includes funds for the continuance of the clinic at the jail for the examination of vagrants and for the treatment of patients at the five emergency hospitals. The special feature of this budget is a fund for the establishment of a detention home in San Francisco. The total amount of this budget is nearly $50,000.

Supplemental Lectures in Camps.

Dr. Ophüls and Dr. Alderson, during the first two weeks of March, gave ten lectures on venereal diseases to the men at Camp Fremont. At Mare Island, on March 11th, Dr. Goldman gave two lectures to the marines and he will lecture again on the first and the last Tuesdays of each month at Mare Island. Dr. Ophüls gave four lectures at the San Diego Naval Training Station March 18th and on March 19th one lecture at San Pedro Naval Training Station. The Navy men in San Francisco, numbering about 70, were addressed by Dr. Ophüls at Lane Hospital on March 12th. Up to date it is estimated that there have been 45,000 men addressed by lecturers of the bureau.

The entire state is awakening to the importance of the prevalence of venereal disease and the local health officers of the small communities deserve great commendation for their assistance and co-operation. An extensive educational campaign is being planned, the details of which will be published in the next Bulletin.

Arseno-Benzol Distributed by the Bureau During March.

	Doses.
San Francisco Health Department	133
Los Angeles Health Department (including city and county requisitions)	100
Fresno Health Department (including city and county requisitions	83
San Diego Health Department	25
Sacramento Health Department	20
Kern County Health Officer	20
Santa Clara County Health Department	12
Stanford University Clinic	12
Shasta County Hospital	3
Siskiyou County Health Officer	3
San Bernardino County Hospital	3
San Mateo County Health Officer	3
San Francisco Juvenile Detention Home	2
Total	419

Treatment Reports Received.

97	patients received 1 dose	97
42	patients received 2 doses	84
28	patients received 3 doses	84
13	patients received 4 doses	52
3	patients received 5 doses	15
1	patients received 6 doses	6
184		338
Prostitutes		86
Other occupations		98
Males		66
Females		118

Patients Treated.

San Francisco Health Department	46
Fresno County Hospital	30
Los Feliz Hospital	26
Santa Clara County Hospital	15
San Diego County Hospital	13
Juvenile Hospital, Los Angeles	13
Stanford University Clinic	8
Los Angeles County Hospital	8
Sacramento County Hospital	6
Children's Hospital, San Francisco	4
Temple Block Clinic, Los Angeles	4
Los Angeles County Jail	3
Santa Barbara Cottage Hospital	2
San Francisco Juvenile Detention Home	2
Shasta County Health Officer	2
Nevada County Hospital	1
Sonoma County Health Officer	1
	184

Total Number of Arseno-Benzol Ampoules Distributed 1760.

Total number of treatment cards received	930
Total number of treatment cards distributed and not returned	830
	1,760

REPORT OF THE BUREAU OF TUBERCULOSIS FOR MARCH, 1918.

By Mrs. E. L. M. Tate-Thompson, Director Bureau of Tuberculosis.

Two workers, devoted to the tuberculosis cause, were called by death last month—Dr. Stehman of Pasadena, whose life, like Trudeau's, was useful and beautiful, and who, like Trudeau, never turned suffering humanity from the door of his sanatorium. Dr. Stehman needs no monument to commemorate his memory, yet La Viña will ever be to those who knew and loved him and to many who have been patients there, a silent reminder of a man, who for years suffered from tuberculosis, but who in spite of his own illness remembered those less fortunate than himself. Mrs. Margaret Lutes, the nurse of The San Diego Society for the Study and Prevention of Tuberculosis, who was later made the municipal visiting nurse, passed away suddenly. Mrs. Lutes laid the foundation, at San Diego, for the splendid nursing service carried on there now, and her death is a loss to the tuberculosis cause.

Considerable time during the past month has been spent with architects who are building the various new sanatoria. It is interesting to report that aside from meeting the bureau's requirements, all of the new buildings are different and each group extremely attractive and comfortable.

Sacramento and the eleven northern counties have their institution well under way.

Kern County's site in the mountains has been approved and the sanatorium will probably be ready very soon. A day was spent, recently, going over the site.

Tulare and Kings counties' plans are well under way. The director, in company with Miss Julia Morgan, the architect, spent some time at Springville, the site for the new sanatorium.

Early in the month the director spoke before the Pasadena Red Cross Chapter on the need for better co-operation and the necessity for a tuberculosis nurse to look after rejected and discharged men. The chapter has decided to put on a nurse to be supported from the proceeds of the seal sale.

Some time, also, was spent at Camp Kearny and with the San Diego Tuberculosis Society. A special worker has been placed at the base hospital in the tuberculosis wards, which will help matters very much.

Two meetings have been held at Fullerton.

The problem of the California Indian was presented before the San Joaquin Valley District Federation of Women's Clubs. Action was taken to provide some helping stations in the mountains near the missions on the reservations.

The director spoke at the Sacramento Tuberculosis Association's luncheon and, later in the week, before the Friendly Visitors of the Hebrew Relief, in San Francisco.

A conference was also held with Mayor Rolph, Dr. Brodrick and the chairman of the finance committee of the San Francisco board of supervisors, and as we go to press the $50,000 needed to start the outside sanatorium is assured.

Hospitals inspected:

Los Angeles.
Fresno.
Merced.
Arroyo.
Tuberculosis wards—Base hospital, Camp Kearny.

REPORT OF THE BUREAU OF VITAL STATISTICS.

George D. Leslie, Director.

*Births, Deaths and Marriages for February.**

State, Totals and Annual Rates. The following table shows for California as a whole, the birth, death and marriage totals for the current month of the year to date in comparison with corresponding figures for last year, as well as the annual rates per 1,000 population represented by the totals for the current month and the year to date. The rates are based on an estimated midyear population of 3,129,584 for California in 1918 the estimate having been made by the United States Census Bureau method with slight modifications.

Birth, Death and Marriage Totals, with Annual Rate per 1,000 Population, for Current Month and Year to Date, for California: February.

Month	Total		Annual rate per 1,000 population, 1918
	1918	1917	
February—			
Births	4,122	3,899	16.9
Deaths	3,598	3,689	14.9
Marriages	2,322	2,271	9.7
January and February—			
Births	8,371	7,558	16.5
Deaths	7,289	7,849	14.4
Marriages	5,006	4,642	9.9

Note.—The present report is for the month preceding but two. This order must be followed because of the publication of the Bulletin during the early part of the month, before the tabulation of records for the next preceding month is completed.

An increase of 223 births is shown for February, 1918, over February, 1917. A slight decrease is shown for deaths for the same month this year over that of last year, while the marriage total remains practically the same.

The first two months of 1918 show an increase of 813 and 364, respectively, for births and marriages, and a decrease of 560 for deaths in comparison with the same two months of 1917.

Length of Residence. The length of residence in California for the 3,598 decedents in February was as follows: Under 1 year, 261, or 7.3 per cent; 1 to 9 years, 638, or 17.7 per cent; 10 years and over, 1,623, or 45.1 per cent; life, 915, or 25.4 per cent; and unknown, 95, or 2.8 per cent.

For residents of the 70 cities of 2,500 population in 1910, there were 87 births and 155 deaths which occurred in registration districts other than the city of residence.

County Marriage Totals. The counties showing the highest marriage totals for the month were as follows: Los Angeles, 518; San Francisco, 462; Alameda, 224; San Diego, 175; Santa Clara, 81; Fresno, 80; Orange, 73; Sacramento, 73; San Joaquin, 61; San Bernardino, 54; Riverside, 35; Marin, 30; Sonoma, 28; and Stanislaus, 27.

County Birth and Death Totals. Exclusive of stillbirths in both cases, the birth and death totals for the month were as follows for the leading counties, arranged in decreasing order of birth registration:

County	Births	Deaths	County	Births	Deaths
Los Angeles	986	989	Kern	94	46
San Francisco	610	625	Tulare	73	44
Alameda	419	312	Santa Barbara	70	29
Fresno	209	107	Orange	66	49
Sacramento	149	113	Stanislaus	65	31
San Diego	130	172	Imperial	64	39
Santa Clara	123	127	Sonoma	58	46
San Bernardino	104	97	Contra Costa	53	41

City Birth and Death Totals. Birth and death totals, exclusive of stillbirths, are presented similarly for the principal California cities below:

City	Births	Deaths	City	Births	Deaths
Los Angeles	652	630	Bakersfield	54	28
San Francisco	610	625	Pasadena	49	50
Oakland	279	173	Long Beach	46	51
San Diego	107	133	San Jose	43	36
Sacramento	91	97	San Bernardino	35	30
Fresno	69	29	Santa Barbara	34	18
Berkeley	65	50	Richmond	31	[illegible]
Stockton	59	70	Alameda	30	26

Causes of Death. The following table shows the classification of deaths in California for the current month, in comparison with the preceding month:

Deaths from Certain Principal Causes, with Proportion per 1,000 Total Deaths, for Current and Preceding Month, for California: January.

Cause of death	Deaths: February	Proportion per 1,000	
		February	January,
All causes	3,598	1,000.0	1,000.0
Typhoid fever	18	5.1	2.4
Malarial fever	1	0.3	0.8
Smallpox	2	0.5	----------
Measles	24	6.8	4.9
Scarlet fever	8	2.2	1.4
Whooping-cough	28	7.8	3.3
Diphtheria	18	5.1	6.0
Influenza	21	5.8	8.7
Other epidemic diseases	9	2.5	3.5
Tuberculosis of lungs	419	116.4	108.9
Tuberculosis of other organs	53	14.7	9.0
Cancer	260	72.3	71.5
Syphilis and gonorrhœa	26	7.2	----------
Other general diseases	129	35.9	48.2
Meningitis	38	10.6	8.7
Other diseases of nervous system	320	88.7	97.5
Diseases of circulatory system	556	154.5	154.1
Pneumonia and broncho-pneumonia	415	115.4	123.8
Other diseases of respiratory system	114	31.7	28.7
Diarrhea and enteritis, under 2 years	46	12.8	11.7
Diarrhea and enteritis, 2 years and over	19	5.3	4.3
Other diseases of digestive system	195	54.2	58.0
Bright's disease and nephritis	339	91.2	85.4
Childbirth	24	6.7	7.3
Diseases of early infancy	134	37.2	32.5
Suicide	38	10.5	17.3
Other violence	244	67.8	65.8
All other causes	100	27.8	36.3

In February there were 556 deaths, or 15.5 per cent of all, from diseases of the circulatory system; 529, or 14.7 per cent, from diseases of the respiratory system (including 415 deaths from pneumonia and broncho-pneumonia); 472, or 13.1 per cent, from the various forms of tuberculosis. The deaths from heart disease exceeded those of any other cause.

The deaths from the four leading epidemic diseases reported for the month were distributed by counties as follows:

Whooping-cough	
Alameda	7
Humboldt	2
Imperial	1
Los Angeles	2
Marin	1
Mendocino	1
Merced	2
Sacramento	1
San Francisco	8
San Joaquin	2
Solano	1
	28

Measles	
Butte	1
Contra Costa	1
Fresno	2
Kern	1
Los Angeles	3
San Bernardino	1
San Diego	3
San Francisco	2
San Joaquin	2
Santa Barbara	1
Siskiyou	1
Solano	2
Tulare	4
	24

Influenza	
Alameda	3
Butte	1
Imperial	1
Los Angeles	10
Marin	1
San Benito	1
San Diego	1
San Luis Obispo	2
Shasta	1
	21

Diphtheria	
Alameda	1
Fresno	1
Humboldt	1
Los Angeles	5
Marin	1
San Francisco	5
San Joaquin	1
San Mateo	1
Santa Barbara	1
Yuba	1
	18

Sex, Race and Nativity. The proportion of the sexes among the 3,598 decedents in February was: Male, 2,203, or 61.2 per cent of all, and female, 1,395, or 38.8 per cent.

The race distribution of decedents was: White, 3,373, or 93.7 per cent; Japanese, 84; Chinese, 77; Negro, 49; and Indian, 15.

The 3,373 white decedents were classified by nativity as follows: California, 810, or 24.0 per cent; other states, 1,386, or 41.1 per cent; foreign, 1,082, or 32.1 per cent; and unknown, 95, or 2.8 per cent.

Infant Mortality. There were 329 deaths for children under 1 year, which were distributed by age in months as follows: Under 1 month, 152, or 46.2 per cent; 1 to 2 months, 61, or 18.5 per cent; 3 to 5 months, 49, or 14.9 per cent; and 6 to 11 months, 67, or 20.4 per cent.

In certain cities and counties the deaths under 1 year were as follows: Los Angeles, 50; San Francisco, 49; and Oakland, 21.

The 329 deaths under 1 year in comparison with the 4,122 live births reported for the month show an infant mortality ratio of 79 per 1,000 births.

REPORT OF THE BUREAU OF SANITARY ENGINEERING FOR MARCH, 1918.

By C. G. Gillespie, C.E., Director.

Licensing of Water Works and Sewer Systems.

A recent compilation has shown that 123 waterworks and 114 sewer systems in California are being operated without complying with the provisions of chapters 754 and 600, which require that a permit from the State Board of Health to construct and operate these works must be held, on penalty of injunction, fine or imprisonment of officers or employees. Notification of the law has been sent to all delinquents. Applications for permit are now being filed with the bureau.

Each application will be carefully considered as to the merits of the system employed, as rapidly as facilities permit. If, from the evidence submitted, the board is satisfied that no improvements are urgent, a permit will be issued in the particular instance. If certain improvements are plainly in order a "temporary permit" will be issued "pending execution of the improvement." If the evidence is not conclusive a "temporary permit" will be issued "pending personal inspection by the bureau and compliance with resultant requirements."

SEWAGE DISPOSAL.

Applications for Permits Filed.

Calexico. To continue to operate its present sewerage system and disposal plant, consisting of two septic tanks discharging into New River.

Cloverdale. To use sewage to irrigate tomatoes for canning purposes, with the precaution that the tomato vines shall be staked up free from the ground and that irrigation shall stop at least 30 days prior to the gathering of the crop.

Lindsay. To operate sewer system and sewer farm.

Lodi. To continue to use existing sewer system and septic tank, discharging effluent into irrigation ditch of the Woodbridge Canal Company.

Los Banos. To use existing sewer system and septic tank.

Napa. To continue to sewer into the tide waters of Napa River without any alteration of the system now in use.

Piedmont. To continue to use existing sewer system.

Pinole. To operate existing sewer system, discharging into San Pablo Bay about 200 yards below low water mark.

Pomona. To continue to operate present sewer system and septic tank.

Santa Clara. To continue the use of septic tanks, the effluent discharging onto land owned by Roche & Silva and used to irrigate alfalfa.

Sausalito. To use existing sewer system, discharging into the bay about 300 feet from shore.

Selma. To continue to use the present septic tank, discharging the effluent onto the city sewer farm and property of C. L. DeRyder.

Tracy. To continue to use existing sewer system, Imhoff tank and sewer farm.

Tulare. To operate, repair and make extensions to present sewer system. Sewage disposal is through septic tank onto sewer farm.

Venice. To maintain and operate present sewer system and disposal works consisting of septic tank discharging into ocean about 1,600 feet from ordinary high tide.

Watsonville. To operate existing sewer system; sewage disposed of, without treatment, into Pajaro River.

Whittier. To continue the use of present septic tank and city sewer farm, which is leased to private parties.

Holtville. To construct outfall to Alamo River, to remove excess water from sewer farm.

Chico. To use existing septic tank and sewer farm three and one-half miles west of the city. The sewage is used to irrigate nursery stock.

Corning. To operate present system of sewage disposal, consisting of septic tanks, the overflow of which runs along surface drainage.

Eureka. To use the existing sewer system, discharging into Humboldt Bay.

Ferndale. To use existing sewer system, discharging into tide water one-half mile from town limits.

Hollister. To discharge sewage onto lands owned by Lawrence Feddersen, and in the winter months into San Benito River.

Livermore. To use the existing disposal works, consisting of a septic tank located on the land of G. L. Monahan, who uses the sewage for the irrigation of alfalfa.

Manteca, J. E. McCabe. To maintain a sewer well at Manteca.

Monrovia. To use existing sewer and sewage disposal system; septic tank located in San Gabriel Wash, about one and one-half miles south of the city; effluent of tank retained in sand and gravel basins.

Newman. To use existing sewer and sewage disposal system, including septic tank located about two miles east of town.

Oakdale. To continue to discharge sewage from the sewer system of the city of Oakdale into the Stanislaus River, after passing it through a septic tank.

Oceanside. To use existing works, consisting of sewers, septic tanks and outfall sewer into the ocean; the district served being about 90 blocks in the central portion of the city of Oceanside.

Pacific Grove. To use present sewer system, discharging into the bay of Monterey through six outlets.

Redlands. To use the present system, the sewage being used to irrigate orange trees.

Redwood City. To use present sewer system, with outfall into Redwood Creek, tributary to the bay of San Francisco.

San Leandro. To operate the existing system, with two outlets, into the bay of San Francisco.

San Mateo. To continue the use of the two existing sewer systems, the sewage from the district north of Ninth avenue being treated in a septic tank, the effluent discharging into San Francisco Bay at approximately the elevation of mean low tide; the sewage from the district lying south of Ninth avenue being carried through a 12-inch outfall sewer of the Homestead Sanitary District, discharging into San Francisco Bay near the mouth of Seal Creek.

Woodland. To use the existing equipment and system for disposing of the sewage of the city of Woodland, consisting of a pipe line conveying said sewage to a sewer farm located about 5 miles east of the city. The sewage is emptied on this farm and stands in lakes.

Porterville. To use existing system, comprising septic tank and 130-acre sewer farm; sewage used principally to irrigate alfalfa.

Sanger. To operate the existing sanitary sewer system, including a three-cell Castner septic tank, the effluent of which is discharged onto pasture land.

Manteca, Joshua Cowell. Applications to maintain sewer wells Nos. 1, 2 and 3.

Upland. To install an internal sewer system to connect with the outfall sewer of the city of Ontario; sewage to be taken care of by the city of Ontario, under an agreement between the two cites.

Pleasanton. To use the existing sewer system and septic tanks.

Pittsburg. To continue to use existing sewers, septic tank and outlets into New York Slough.

Richmond. To use the existing sewer system with three outlets into San Francisco Bay between Point Potrero and Point Isabel and one outlet entering San Pablo Bay southeasterly from Point San Pablo.

Mountain View. To maintain existing sewer systems and make necessary extensions thereto.

Permits Granted.

Cloverdale. To use sewage to irrigate tomatoes, it being understood that the tomatoes are to be used solely for canning purposes.

Plans Filed—None.

Investigations, Inspections, Reports and Conferences.

Arcadia. March 7th. A site near Arcadia has been considered for a government aviation camp and the bureau was called upon to advise as to its feasibility with reference to sewage disposal. Inspection indicated that sewage disposal would not present serious difficulties, but definite plans have not yet been decided upon.

Newport Beach. March 12th. This city is planning to install a complete sewer system. The proposed disposal site was inspected in company with the city's engineer and appears to be satisfactory. Clarification in an Imhoff tank and final disposal into tide water at mouth of Santa Ana River is proposed.

El Monte. March 13th. Improper disposal of waste from canning plants has resulted in nuisance and complaints. There is no public sewer system and waste has been discharged on ground beside plants and along streets. Easiest solution appears to be to pipe waste about one-half mile and spread it on sandy land frequently plowed.

Riverside. March 18th. The bureau was asked to advise relative to sewage disposal at the new aviation school being built near Riverside. The most feasible plan appears to be to clarify the sewage in an Imhoff tank and use the effluent for irrigating a large area of sandy land about half a mile to the east.

Colton. March 19th. Flood waters in Santa Ana River have washed away the flume used for carrying sewage across to the south side of the river. It is proposed to soon lay a pipe line across under the river bed to replace flume. In the mean time sewage is being disposed of on land on north side of the river.

Sacramento, Aviation Field. March 18th. Inspection of site of proposed field, to advise on sewage disposal. Advised pumping facilities, pumping to Imhoff tank on higher ground, chlorination and disposal by furrow irrigation on lands cropped to crude crops planted in rows, or uncropped, as desired.

Turlock. March 19th. Inspection of sewer farm and surrounding territory to advise on improvements. Sewer farm is in low ground with little soil over hardpan. In addition, it is located in the midst of small farms encroaching on all sides. Complaints are becoming frequent. Advised making start on an outfall leading to open country six miles distant and to parcel sewage to farmers willing to use it, outfall to be extended as complaints and other causes compel. There is some possibility of a large drain ditch being built within two miles of the farm. It was advised that possibility of disposal there and requisite treatment of sewage be kept in mind in any steps taken.

Represa, State Prison at Folsom. March 27th. Intensive study and "tuning up" of recently completed Activated sludge plant for State Prison began.

Benicia. March 5th. Further investigation of sewage conditions made. The west side of town visited. Numerous small sewers found that drain on top of the ground in near-by alley or field. The board of trustees, at their regular monthly meeting, were urged to remedy conditions and to have competent engineer present plans for a comprehensive sewerage system, these plans to be presented to the State Board of Health for approval.

Merced Falls. March 21st to 23d. Yosemite Lumber Company. New chlorinator recently installed to treat septic tank effluent prior to discharge into Merced River, as required by the State Board of Health. A test of the chlorinator was made by the bureau. The effective dose was found to be about 55 pounds of chlorine per million gallons of sewage. Test also showed that this machine was incapable of feeding the chlorine consistently, as set, decreasing from 4 pounds per 24 hours to 0.5 pounds in a few hours and increasing to 1.3 pounds, then decreasing to 0.3 pounds.

Merced River. March 22d. Reinspection was made of conditions at Mountain King, Bagley and Detweiler. The sewage from Mountain King all drains to the river. Management was advised to install a septic tank with subsurface effluent drains. At Bagley the sewage from the hotel drains to the river. The proprietor was advised to construct a cesspool in gravelly soil near by. No sewage was draining to the river at Detweiler.

Manteca. March 22d and 28th. Inspection was made of sanitary conditions. The sewage of this town is disposed of in shallow cesspools and deep sewer wells. Shallow wells soon overflow and cause insanitary conditions. The deep sewer wells are driven to water-bearing strata. These work well for a short time, but soon become clogged and overflow. Such wells are prohibited by law, as they tend to contaminate deep water strata. Conferences were held with various citizens, who were advised that permits must be obtained for use of such sewer wells and urged to incorporate and install a sanitary sewerage system, as the real solution of the diffculties.

Livermore. March 27th. The city is completely sewered. The disposal system consists of a septic tank and a sewage farm. The effluent from the tank is used to irrigate an alfalfa field and an almond orchard. The ground is gravelly and the sewage soon disappears. The septic tank needs cleaning badly.

Tracy. March 29th. With the exception of two new subdivisions, the city is well sewered. Bonds to extend the system to these subdivisions are to be voted upon this spring. The disposal system consists of a septic tank and sewer farm. The septic tank needs cleaning badly. The sewer farm is evidently not cared for. The ground is hard and the sewage all pools in one spot. In hot weather, this must cause an odor nuisance.

Antioch. March 29th. The built-up parts of the city are completely sewered. There are three outfalls into the San Joaquin River, reaching to current, which obviates nuisance but contributes to the gross pollution of the river, which the town itself and Pittsburg, a few miles below, depend on for water supply with, however, considerable effort at filtration and disinfection prior to use.

WATER SUPPLIES.

Applications for Permit Filed.

Calexico. To continue to operate its municipal water plant, deriving water from the Imperial Valley Irrigating Canal System.

Centerville, Centerville Water Company. To sell water for domestic and other purposes from existing deep wells.

Chico, Chico Water Supply Company. To continue to supply water to the inhabitants of Chico from existing wells and to put down additional wells and install new pumping machinery.

Corcoran, Corcoran Water and Gas Company. To continue to supply water to the city of Corcoran from present sources of supply, to wit: one artesian well 1,200 feet deep and two wells 180 feet deep.

Ferndale, Francis Land and Water Company. To supply water for domestic uses to the town of Ferndale from certain springs now in use.

Hollister, The Hollister Water Company. To supply water from artesian wells in Grass Valley and a reserve supply of five wells in Hollister.

Inglewood, Inglewood Water Company. To supply water to the city of Inglewood and adjacent territory from existing wells.

Lindsay. To supply water to the city of Lindsay from three deep wells.

Morgan Hill. To supply water from spring and one well.

Newman, Newman Water Works Company. To supply water to the town of Newman, derived from wells and pumped through a "filtering tank."

Oxnard. To supply water to the citizens of Oxnard from existing artesian wells and to complete installation of electrically driven pump.

Redondo, Redondo Water Company. To supply water to the city of Redondo Beach from three wells, water pumped to reservoir of one and one-half million gallons capacity.

Reedley. To supply the inhabitants of the city of Reedley with water for domestic purposes, derived from a 120-foot well.

Alhambra, San Gabriel Valley Water Company. To supply water from existing wells and to make alterations or additions to the water works, as required.

Santa Clara. To supply water to the inhabitants of the town of Santa Clara, derived from wells situated within the town.

Sawtelle, Crystal Springs Water Company. To continue to sell water for domestic purposes.

Tehachapi. To use, operate and maintain the municipal water works, deriving the supply from a bored well within the corporate limits.

Tracy. To continue to supply water for domestic uses, the supply derived from two wells.

Tulare. To supply the inhabitants and maufacturing plants, located at Tulare, from a system of deep wells.

Watts, Conservative Water Company. To supply water to the city of Watts and adjoining territory in Los Angeles County, from its well situated at 8823 Fir Street, Graham.

Arcadia. To continue to supply water to residents of the city of Arcadia, pumped from four wells.

Arcata, Union Water Company. To supply water for domestic purposes to the inhabitants of Arcata from existing springs and Janes Creek supply; the latter used during dry weather.

Burbank. To continue to supply water to inhabitants of Burbank and adjacent territory, the main source of supply being deep wells; a minor source of supply is water purchased from L. C. Brand of Tropico.

Chino. To operate and maintain the present existing water system. The main source of supply is from wells operated by pumps, discharging into a 500,000-gallon covered concrete reservoir.

Corning. To continue the present system of waterworks and water supply, pumped from deep wells.

Coronado, Coronado Water Company. To continue to supply water from wells located in Otay Valley and a new 136.5-foot bored well in same vicinity and from the water supply of the San Diego city water system.

Huntington Beach, Huntington Beach Water Company. To continue to supply water to the inhabitants of Huntington Beach and vicinity; the supply is derived from four wells and pumped directly into the distributing system.

Monrovia. To continue to supply water for domestic and irrigation uses from Chapman wells and gravity surface supply.

Oakdale. To continue to supply water to the residents of Oakdale from three deep wells.

Taft, Western Water Company. To supply water for domestic purposes to the city of Taft and to the Westside oilfields in the counties of Kern and San Luis Obispo from deep wells about twelve miles from Taft.

Winters. To use existing works, pumping the water from wells by electric motor.

Woodland. To use the existing waterworks, the supply being derived from wells located within the city.

Yuba City. To continue to supply water from two 12-inch wells, 185 feet and 85 feet respectively.

Highland, Highland Domestic Water Company. To continue to supply water from drilled wells.

Porterville. To operate the existing water system, which consists of three deep wells, three storage tanks and about 18 miles of mains.

Sanger. To operate the present water works, deriving the supply from a 96-foot well.

Pleasanton. To use the existing waterworks, the supply being derived from wells.

Rialto, Rialto Domestic Water Company. To continue to supply water to the city of Rialto and vicinity from Lytle Creek.

Santa Monica. To supply water for domestic purposes within the city limits of Santa Monica from bored wells located in the cities of Santa Monica, Sawtelle and Venice and from gravity water secured from Rustic Canyon in the Santa Monica Mountains.

Centerville, Fred F. Dusterberry. To sell water in the town of Centerville; supply derived from a bored well.

Permits Granted—None.

Plans Filed.

Coronado, Coronado Water Company. Plans of waterworks and system.

Investigations, Inspections, Reports and Conferences.

Yuma, Arizona. March 5th. In this city is a filter plant similar to one proposed for El Centro, California. An inspection was made and samples obtained to determine its efficiency. This plant filters settled Colorado River water and produces an effluent of excellent appearance.

San Dimas. March 25th. The water supply is derived from wells and from San Dimas Canyon. The canyon water is subject to contamination by campers and the company during the past week has installed chlorinating apparatus for disinfecting it. During summer months, when contamination is greatest, the canyon water is used only for irrigation and not admitted to domestic system.

St. Helena. March 6th. St. Helena Water Company. Water supply is obtained from surface sources, subject to contamination, and requires chlorination. For over two months the chlorine apparatus has not been used, due to delay in receiving new connection between machine and main.

Santa Rosa, Santa Rosa Water Works. March 7th. Conference held with various officials of the company concerning the removal of the chlorinator from its present position at the dam to above the inlet pipe to the reservoir. At present water is chlorinated at a receiver on the dam. Water directly from the creek flows through this receiver from a shallow water intake. Whenever water is so low that shallow water intake can not be used, the deep water intake is used. Water from deep water intake does not flow through receiver and can not be chlorinated. The company has been advised to remove chlorinator above into pipe to reservoir, so that all the water will be chlorinated before flowing to reservoir.

Manteca. March 28th. Manteca Water Company. Supply is obtained from well 285 feet deep. Casing is not perforated, all water being obtained through end of casing. Water is pumped directly into mains. Overflow is pumped into 50,000-gallon steel tank. Analysis of water shows high bacterial count but no B. Coli contamination.

Tracy. March 29th. Municipal supply. Supply is obtained from two wells, 198 and 298 feet deep, driven through alternate layers of clay and gravel. Casing is perforated at each water-bearing stratum. Water pumped directly into mains. Overflow pumped to 100,000-gallon steel reservoir. Analyses of water show it to be of excellent quality, although it is a hard water.

Antioch. March 29th. Reinspection. Water is pumped directly from the San Joaquin River. It is filtered and chlorinated before entering city mains. At time of inspection, the amount of alum used as a coagulant was at the rate of 140 pounds per million gallons. Amount of chlorine was 3 pounds per million gallons. These amounts are higher than normal, due to excessive turbidity.

SWIMMING POOLS.

Applications for Permit Filed.

Aetna Springs, Mr. Len. D. Owens, Manager. To operate Aetna Springs Baths.

El Centro, Mr. L. L. Nielsen. To operate El Centro Plunge.

San Diego, The Local War Work Council of the Young Women's Christian Association. To operate Y. W. C. A. Baths.

Stonyford, Colusa County, Fouts Springs Company. To operate Fouts Springs Baths.

Warner Springs, Mr. B. Kerr. To operate Warner Springs Baths.

Temporary Permits Granted.

Pending investigation, temporary permits have been granted to operate the above named pools.

Plans Filed—None.

Inspection.

Lodi, Municipal Baths. March 18th. City is now molding a shallow gutter around pool to intercept walk drainage and making some other changes. The shallow gutter was criticized as conducive to the accumulation of sputum and spread of cold and infections among bathers, who will use the gutter for a hand grip. It was recommended that the pool be disinfected regularly each night, regardless of amount of new water added, also that the entire interior be kept painted with white paint to improve the air of cleanliness.

LABORATORY REPORT.

By **Frank Bachmann**, Chemist and Bacteriologist in Charge.

The following is a summary of work done by the laboratory of the Bureau of Sanitary Engineering for March, 1918:

Berkeley Office:

Bacteriological examinations of water—326.
Bacteriological examinations of sewage—10.
Chemical examinations of water (partial)—317.
Sanitary chemical examinations of water—15.
Mineral examination of water—1.

Los Angeles Office:

Bacteriological examinations of water—67.

SPECIAL.

The investigation of sources of pollution and the disinfection of the water supply of a certain public institution in Oakland, carried on during the month, has proven of interest. The water supply is obtained from two tunnels, one 42 feet and the other 50 feet deep and 40 feet and 200 feet in length, respectively, dug in the delta gravel drift of old creek beds. The 42-foot tunnel has been recently completed. Each tunnel is lined with redwood and trapezoidal in cross-section 2½ feet at top, 3 feet at bottom and 6 feet high, and both enter a common shaft. A small centrifugal pump, motor driven, lifts the water as needed to two redwood tanks about 70 to 80 feet high, with a capacity of 31,800 and 9,750 gallons. These tanks serve as storage and pressure for the distributing system.

The bureau was consulted by reason of a disagreeable taste which was noticed in the water stored in the tanks, soon after the completion of the new well. On investigation it was found that the water had a bacterial count of 5,000 bacteria per c.c. on Agar 37°C, and B. Coli present in 0.1 c.c., the highest dilution made. On continued pumping the bacterial count decreased to about 200 per c.c., but B. Coli were persistently present in the samples taken directly from the well. It was recommended that the supply be discontinued immediately and the city supply substituted until the tunnel water could be properly disinfected.

Experiments were made at the plant to determine the dose of available chlorine necessary to disinfect. Sample for free chlorine tests and bacterial examinations were taken for each dose of bleach experimented with. Results showed that a dose as high as 0.8 parts per million available chlorine was necessary to eliminate B. Coli in 10 c.c. of the water most of the time. As this dose was extremely high as compared to that used commonly on water supplies, bottle experiments in the laboratory were deemed advisable as a check.

Samples were treated in the laboratory with chlorine varying by tenths from 0.1 to 2.0 p.p.m. Tests for available chlorine, together with bacterial examination, were made on each sample after 30 minutes contact. The results showed that 0.9 p.p.m. chlorine was necessary to completely eliminate B. Coli in 10 c.c. of the water, which is the arbitrary standard of the California State Board of Health. The check against the dose found necessary in practice is very close. Only a faint trace of residual chlorine was present after 30 minutes contact in the samples treated with 0.7 to 1.5 p.p.m. Cl. Below 0.7, the chlorine tests showed a negative result. Ordinarily, 30 minutes contact and 0.3 p.p.m. of chlorine will leave residual chlorine in waters of normal organic matter content.

Bacteriological and sanitary chemical analyses of water from wells in the immediate neighborhood and apparently from the same water strata showed that they were free from contamination, while the water from the tunnel was high in bacterial count, excessive in B. Coli content and very high in nitrites. Suspicion was at once directed to several sewers in the immediate vicinity, one of which ran within 25 feet of the new tunnel. No other sources of contamination could be located. Tests for leaks are to be made on these sewers, which it appears will explain the gross contamination in the tunnel. In fact, at the time of this writing, the tunnel water has been observed to darken in appearance when a dye solution at the institution is discharged into the sewers near the new tunnel.

The value of analysis of water supplies is again demonstrated. Fortunately, no sickness has been attributed to the use of this water, but the possibilities of an epidemic have been forestalled, as the supply will not be used until the source of contamination is eliminated and the water is potable, as shown by laboratory tests.

REPORT OF THE BUREAU OF FOODS AND DRUGS FOR MARCH, 1918.

E. J. LEA, M.S., Director.

During March 241 samples of foods, drugs and miscellaneous materials were received at the laboratory for analysis and examination.

The official samples consisted of antipasto, apple butter, "Beno," bread, butter, candy, catsup, cheese, chocolate, cream, cream roll, condiments, egg substitutes, fish (canned), grape juice, honey, jelly, liquors, meat, milk, noodles, oyster cocktail, pie dough, spices, syrups, vegetables (canned) and vinegar. The drugs among the official samples were cubebs (powdered), Florida water, headache powders, essence of peppermint, petrolive and tincture of iodine.

The unofficial samples of foods consisted of bread, butter, cereals, condiments, confectionery, eggs (Chinese), eggs (dried), egg substitutes, fish (canned), flour, gelatine, horseradish, ice cream, liquors, olives, peaches (canned), soup (canned), spices, syrup, vegetables (canned) and vinegar. The miscellaneous samples were cleanser, cubebs (powdered) and wool.

The state institutions sent in the following samples: Butter, cheese, flour, lard, lard compound, lemon extract and soap.

Chocolate, Cocoa, Etc.

There appears to be some misunderstanding on the part of many retail dealers in this state regarding the use of the terms "chocolate," "cocoa," "sweet chocolate" and "sweet cocoa," etc.

In many cases retail dealers have reported that salesmen for chocolate companies have instructed them in regard to the preparation of chocolate as follows: "Make a mixture of 50 per cent powdered cocoa and 50 per cent sugar which may be labeled 'Pure Ground Chocolate.'" A mixture of this character can not be sold as ground chocolate. It should be labeled and sold as "Sweetened Cocoa." Pure chocolate, on account of the high percentage of cocoa fat, never appears in the ground state. Therefore, all of the powdered preparations should be labeled "Cocoa" or "Sweetened Cocoa," as the case may be.

Dealers are therefore warned not to label powdered preparations as "Chocolate," and, furthermore, all chocolate and cocoa mixtures containing sugar should be labeled "Sweetened Chocolate" or "Sweetened Cocoa."

Notice to Bakers.

Investigations by this department show that saponin and pastry fillers containing saponin are still quite largely used in this state.

Attention is called to Service and Regulatory Announcement No. 173, which reads:

> "It appears that saponin is used in these products solely as a foam producer and has in most cases the result of giving them a fictitious appearance of body and therefore of food value. The Food and Drugs Act specifically defines a product as adulterated if it be mixed, colored, powdered, coated, or stained in a manner whereby damage or inferiority is concealed. After careful consideration the bureau has reached the conclusion that the addition of saponin to food products as usually practiced results in concealing damage or inferiority and, therefore, constitutes adulteration within the meaning of the Food and Drugs Act."

This department will prosecute bakers who are found using saponin or pastry fillers containing saponin as indicated above.

Noodles.

The attention of manufacturers of noodles is again called to the standards for noodles, which are as follows:

> "*Noodles, egg noodles,* are dried alimentary pastes made from wheat flour and egg. They contain not less than five (5) per cent by weight of the solids of whole, sound egg exclusive of the shell.

> "*Plain noodles, water noodles,* are dried alimentary pastes made from wheat flour without egg, or with less than five (5) per cent by weight of the solids of whole, sound egg exclusive of the shell."

Since eggs broken from the shell or frozen liquid eggs are composed of about three-fourths water and one-fourth solids, it is necessary to use approximately 20 per cent of fresh eggs, after breaking from the shell, or frozen liquid eggs in order to provide the 5 per cent by weight of whole, sound eggs, exclusive of the shell, required in the above standard for noodles or egg noodles.

In other words, in order to meet the above standard for noodles or egg noodles it is necessary to use approximately 20 pounds of eggs, as broken from the shell, or 20 pounds of liquid frozen eggs to each 80 pounds of flour.

Spices.

When the pure food laws were passed in this state it was not uncommon to find spices, both in packages and in bulk, which were adulterated with large amounts of roasted wheat flour or cocoanut shells. This adulteration frequently exceeded 60 per cent by weight of the spices as sold. This illegal practice was gradually corrected and in the course of a few years the package spices were seldom found adulterated.

Recent investigations have shown that bulk spices are still being adulterated. This is especially true of spiecs sold to bakers, butchers, condiment manufacturers, hotels and restaurants. Samples of so-called "black pepper" recently collected by our inspectors showed on analysis that it consisted of 50 per cent cereal and 50 per cent of ground pepper hulls and dust. This department will make a vigorous effort to abolish frauds of this character.

Syrups.

Ten years ago our markets were flooded with various brands of syrups mislabeled under such terms as "Pure Vermont Maple Syrup," "Canada Maple Sap Syrup," "Pure Maple Syrup," etc. The majority of these syrups proved on analysis to consist very largely, if not entirely, of cane sugar syrup. Some were artificially flavored, whole some had a small amount of maple syrup added for flavoring purposes.

The pure food laws resulted in the correction of the majority of the illegally labeled containers for these syrups. However, a few adulterated and mislabeled syrups have appeared in this state from time to time and we have at this time a very few brands which are labeled in a deceptive manner.

The laws concerning mislabeling cover the use of pictures, designs and devices, as well as words. This department has recently taken action on a syrup put out by the New England Maple Syrup Company, which was labeled "Uncle John's Golden Tree Syrup," and in smaller and less conspicuous type appeared the words "Granulated and Maple Sugar." The can was attractively designed, using for the entire background the bark of a maple tree. The design of the tree appeared on the label and also the picture of a typical New England farmer. In fact, all of the features of the label, except the one word "Granulated," which appeared in small type, were suggestive of a maple product. The word "Granulated" was objectionable because it was not in harmony with Food Inspection Decision No. 75. Analysis of this syrup showed that it consisted very largely of cane sugar syrup with only a very small amount of maple sugar syrup, which gave the product a maple flavor.

Action was taken against this syrup under the pure food laws which resulted in removing the misleading and deceptive features from the labels. This department is investigating all of the maple syrups in this state.

ARTICLES OF FOOD CONDEMNED.

The following articles of food, condemned upon physical and chemical examination as unfit for food, were either destroyed or denatured during the month of March, 1918:

Buckwheat flour, 800 pounds, wormy and moldy, Los Angeles; chile, 25 pounds, moldy and rotten, Los Angeles; olives, 8,100 pounds, decomposed, San Francisco; oranges, 10 pounds, unfit for food, Los Angeles; ripe olives, 600 pounds, decomposed, San Francisco; rock cod, 2,250 pounds, decomposed, San Diego; Roumanian tomato paste, 108 jars, decomposed, Los Angeles; sardines, 1,056 pounds, decomposed, San

Diego; sardines, 94 cans, swelled, Los Angeles; tomatoes, 1,056 cases No. 10 tins, decomposed, San Diego; tomato puree, 3,826 cases No. 10 tins, decomposed, San Diego; vinegar, 100 gallons, putrid, Los Angeles; walnut meats, 2,022 pounds, wormy and shriveled, San Francisco.

CONVICTIONS UNDER FOODS AND DRUGS ACTS, REPORTED DURING MARCH, 1918.

There were 97 convictions obtained during the month of March, a total of $1,510.00 in fines being imposed; following is a list of the violators:

Los Angeles—Scolinos & Vlands, lemon drops, adulterated and mislabeled, fined $10; Standard Equipment Co., vanilla flavor, adulterated and mislabeled, guilty; Moses Bros., tomato paste, adulterated and mislabeled, fined $10; California Bakers' Specialty Co., ginger extract, strawberry preserves, fig paste and lemon extract, adulterated and mislabeled, fined $40; Frey Bros., eggs, adulterated and mislabeled, guilty; J. Gaglino, maple sugar, adulterated and mislabeled, fined $10; Dorner & Dice, Amer Picon, adulterated and mislabeled, guilty; Schaffer & Myers, whiskey, adulterated and mislabeled, guilty; Schaffer & Myers, whiskey, adulterated and mislabeled, fined $25*; C. H. Willard, Capitol Bar, Amer Picon, adulterated and mislabeled, fined $25; Albert Cohn, cream caramels, adulterated and mislabeled, fined $25; Montana Bar, E. A. Fischer, gin, adulterated and mislabeled, guilty*; Montana Bar, E. A. Fischer, whiskey, adulterated and mislabeled, guilty; Montana Bar, E. A. Fischer, Amer Picon, adulterated and mislabeled, fined $25; Jos. Melczer & Co., blackberry cordial, adulterated and mislabeled, fined $25; Lion Bar, Fumo & Longo, Amer Picon, adulterated and mislabeled, fined $25; Mineral Bar, P. F. Gibbons, whiskey, adulterated and mislabeled, fined $25; Mineral Bar, P. F. Gibbons, gin, adulterated and mislabeled, fined $25; Nabel's Bar, cognac, adulterated and mislabeled, guilty; Nabel's Bar, gin, adulterated and mislabeled, fined $25; Hippodrome Buffet, A. Bernstein, Fernet Bitters, adulterated and mislabeled, fined $25; Commercial Buffet, Tony Save, Amer Picon, adulterated and mislabeled, guilty; Commercial Buffet, Tony Save, Fernet Bitters, adulterated and mislabeled, fined 25; Commercial Buffet, Gilka Kummel, adulterated and mislabeled, fined $25; Alt Heidelberg Bar, Jos Blust, whiskey, adulterated and mislabeled, fined $25*; Chicago Club Bar, Schmidt & Brown, whiskey, adulterated and mislabeled, fined $25*; Belasco Bar, Dorner & Dice, whiskey and gin, adulterated and mislabeled, fined $25*; Bogy Bros., B. B. Bar, gin, adulterated and mislabeled, fined $25; Grand Annex Bar, Eraldi & Amillo, whiskey, adulterated and mislabeled, fined $25; E. Lombardo, E. L. Bar, brandy, adulterated and mislabeled, fined $25; American Bar, Sam Sullivan, gin, adulterated and mislabeled, fined $25; Mineral Bar, P. F. Gibbons, whiskey adulterated and mislabeled, guilty; U. S. Bar, J. H. Hallenberger, Gilka Kummel, adulterated and .mislabeled, fined $25; Peerless Bar, Althouse & Bauer, gin, adulterated and mislabeled, fined $25; M. Wakamatsu, eggs, adulterated and mislabeled, fined $20.

Oakland—Oakland Candy Co., strawberry chews, adulterated and mislabeled, fined $10; Perry & Lima, seeded raisins, adulterated and mislabeled, fined $10*; Midway Restaurant, P. F. Dabelich, fresh milk, adulterated and mislabeled, fined $10; Peerless Cafe, H. Lorenzen, egg whites, adulterated and mislabeled, fined $5; Bright & Miller, Berlin Ham, adulterated and mislabeled, fined $10*; Vogel & Poole, fresh eggs, adulterated and mislabeled, fined $5; F. S. Lewin, dandruff cure, adulterated and mislabeled, guilty; Lim Que, eggs, adulterated and mislabeled, fined $5.

Sacramento—Perkins & Co., eggs, adulterated and mislabeled, fined $5.

San Diego—Preimer Packing Co., rock cod, adulterated and mislabeled, fined $50; Golden Lion Bar, J. J. Podesta, cognac, adulterated and mislabeled, fined $10; Golden Lion Bar, brandy, adulterated and mislabeled, fined $10; Golden Lion Bar, Amer Picon, adulterated and mislabeled, fined $25; Golden Anchor Bar, brandy, adulterated and mislabeled, fined $10; Golden Anchor Bar, Fernet Bitters, adulterated and mislabeled, fined $25; Robertson's Pharmacy, camphorated oil, adulterated and mislabeled, fined $25; Tivoli Saloon, Rydberg & Maggiora, cognac, adulterated and mislabeled, fined $10; Tivoli Saloon, wine, adulterated and mislabeled, fined $10; Tivoli Saloon, Amer Picon, adulterated and mislabeled, fined $10; Tivoli Saloon, Fernet Branca, adulterated and mislabeled, fined $25; Bristol Bar, John Snyder, Amer Picon, adulterated and mislabeled, fined $25; Baldessary & Corazzo, maple sugar, adulterated and mislabeled, fined $10; Giovanni Busco, maple sugar, adulterated and mislabeled, fined $10; Imperial Bar, J. Schachtmayer, Italian Vermouth, adulterated and mislabeled, fined $25; Stockholm Bar, Al Henderson, gin, adulterated and mislabeled, fined $10; Stockholm Bar, whiskey, adulterated and mislabeled, fined $25; Telephone Bar, Matt Ryan, cognac, adulterated and mislabeled, fined $25; People's Bar, M. Tomas, whiskey, adulterated and mislabeled, fined $25; Lobby Bar, Edwin T. Phillips, whiskey, adulterated and mislabeled, fined $25; San Diego Relish Co., A. L. Horton, table syrup, adulterated and mislabeled, fined $10; San Diego Relish Co., cider vinegar, adulterated and mislabeled, fined $25; Old

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*Convicted on two counts.

Mission Bar, Alex Williams, Fernet Bitters, adulterated and mislabeled, fined $10; Old Mission Bar, gin, adulterated and mislabeled, fined $25; Edw. C. Tinsley, tincture of iodine, adulterated and mislabeled, fined $10; Edw. C. Tinsley, blue ointment, adulterated and mislabeled, fined $25; Costanzi & Cerutti, M & M Bar, gin, adulterated and mislabeled, fined $10; Costanzi & Cerutti, Fernet Bitters, adulterated and mislabeled, fined $25; Goodwill Saloon, W. V. Thomas, gin, adulterated and mislabeled, fined $25; Pony Bar, Chas. Frey, Amer Picon, adulterated and mislabeled, fined $25; Stag Bar, Jake Baronowski, Amer Picon, adulterated and mislabeled, fined $25; E. Moulie, vanilla extract, adulterated and mislabeled, guilty.

San Francisco—Independant Produce Co., Gust Stathers, dried peaches, adulterated and mislabeled, fined $100; Chas. A. Elgin, catsup, adulterated and mislabeled, guilty; Old Mission Fish Market, P. Fontana, eggs, adulterated and mislabeled, fined $25; Antone Perrello, eggs, adulterated and mislabeled, fined $20; Mugele Bros., eggs, adulterated and mislabeled, fined $25.

San Jose—Gerome Tripoli, tomato puree, adulterated and mislabeled, guilty; Gerome Tripoli, tomato sauce, adulterated and mislabeled, fined $25; Giusto Maggiora, salad oil, adulterated and mislabeled, fined $10; Cuneo & Sanfilippo, tomato conserve, adulterated and mislabeled, fined $25.

San Pedro—McKelvy & Straight, gin and whiskey, adulterated and mislabeled, guilty; John F. Wilkens, brandy, adulterated and mislabeled, guilty.

CASES REFERRED TO DISTRICT ATTORNEYS.

The following cases were referred by the State Board of Health, at the March meeting, to the district attorneys for prosecution. These cases included inferior liquors sold from bottles bearing the original labels of high grade manufacturers, canned tomatoes and tomato products made from moldy and decomposed material, decomposed or rotten eggs sold as fresh, egg substitutes consisting of imitation products colored with coal tar dyes to imitate eggs, extracts highly diluted and deficient in strength, vinegar below standard, coffee containing figs, milk diluted with water, cream containing dirt and sediment, and deficient in fat, soda fountain syrups artificially colored and flavored, pressed ham and corned beef consisting of filthy and decomposed animal substance, ice cream artificially colored and flavored, decomposed dried fruits and various drugs, some of which were below standard in strength and others falsely labeled.

Antioch—F. Dahnken, blackberry brandy. *Berkeley*—Lincoln Market, pressed ham. *Concord*—Liberal Hotel, A. Ferrogiaro, proprietor, Amer Picon. *Crockett*—Bird Saloon, Cinzano Vermouth; Carquinez Pharmacy, camphorated oil; Reception Saloon, Fernet-Branca; Louis Sarres, banana syrup. *Fairfield*—John Cadenasso, Tomato Conserva. *Hayward*—Occidental Hotel, Harry Brown, proprietor, Fernet-Branca and French Vermouth. *Los Angeles*—Bodding-Howie Chemical Co., Custodend, Eggosine and Egginall; New England Maple Syrup Co., Uncle John's Golden Tree Granulated and Maple Sugar Syrup; Charles Clark, catsup. *Martinez*—Sam Altman, Gordon Gin and Dewar's Scotch Whisky. *Monterey*—Palace Drug Co., spirits of nitre; Bay Side Fish Co., tomato puree; K. Hovden & Company, tomato puree. *Oakland*—American Creamery Co., pastry cream; Peerless Cafe, egg whites; Bright & Miller, Berlin Ham; Avenue Drug Store, tincture of iodine; Acme Restaurant, fresh milk. *Pittsburg*—A. Sarris, strawberry syrup and ice cream. *Sacramento*—Durand & Dunning, currants; Jewel Tea Company, dandruff cure. *San Francisco*—Reed Pickle Works, referred on four counts; Scheer, Grandi & Company, eggs. *Santa Cruz*—Seaside Hotel, Dubonnet Wine and Cinzano Vermouth; J. H. Horsnyder, sweet spirits of nitre. *Vallejo*—J. Knutte, white of egg and Egg-o-lene. *Watsonville*—George Hrepich, Amer Picon.

The following Food Inspection Decisions have been issued by the Secretary of Agriculture, Washington, D. C., and by the provisions of section 3, California Pure Foods and Drugs Acts, have the force and effect of law in California.

FOOD INSPECTION DECISION 171.

Macaroni, Spaghetti, Vermicelli, Flour Macaroni, Flour Spaghetti, and Flour Vermicelli.

The following definitions and standards for macaroni, spaghetti, vermicelli, flour macaroni, flour spaghetti, and flour vermicelli were adopted by the Joint Committee on Definitions and Standards, November 18, 1916, and were approved by the Association of Official Agricultural Chemists, November 22, 1916, and by the Association of American Dairy, Food, and Drug Officials, August 3, 1917:

Macaroni, spaghetti, vermicelli are dried pastes made of the semolina of hard wheat.

They contain not more than thirteen and one-half per cent (13.5%) of moisture.

Flour macaroni, flour spaghetti, flour vermicelli are dried pastes made of flour or of a mixture of flour and semolina.

They contain not more than thirteen and one-half per cent (13.5%) of moisture.

The foregoing definitions and standards are adopted as a guide for the officials of this department in enforcing the Food and Drugs Act.

FOOD INSPECTION DECISION 172.

Condiments Other Than Vinegars and Salt.

The following definitions and standards for condiments other than vinegars and salt were adopted by the Joint Committee on Definitions and Standards July 29, 1917, and were approved by the Association of American Dairy, Food, and Drug Officials August 3, 1917, and by the Association of Official Agricultural Chemists November 21, 1917:

The term "dried" as used in this schedule refers to the air-dried product. The term "starch" as used in this schedule refers to starch as determined by the official diastase method. In the examination of the products listed in this schedule the methods of analysis of the Association of Official Agricultural Chemists should be followed, except where otherwise specified.

1. SPICES are aromatic vegetable substances used for the seasoning of food. They are clean, sound, and true to name, and from them no portion of any volatile oil or other flavoring principle has been removed.

2. ALLSPICE, PIMENTO, is the dried, nearly ripe fruit of *Pimenta officinalis* (L.) Karst. It contains not less than eight per cent (8%) of quercitannic acid (calculated from the total oxygen absorbed by the aqueous extract), not more than twenty-five per cent (25%) of crude fiber, not more than six per cent (6%) of total ash, nor more than four-tenths per cent (0.4%) of ash insoluble in hydrochloric acid.

3. ANISE, ANISEED, is the dried fruit of *Pimpinella anisum* L. It contains not more than nine per cent (9%) of total ash, nor more than one and five-tenths per cent (1.5%) of ash insoluble in hydrochloric acid.

4. BAY LEAVES are the dried leaves of *Laurus nobilis* L.

5. CAPERS are the flower buds of *Capparis spinosa* L.

6. CARAWAY, CARAWAY SEED, is the dried fruit of *Carum carvi* L. It contains not more than eight per cent (8%) of total ash, nor more than one and five-tenths per cent (1.5%) of ash insoluble in hydrochloric acid.

7. CARDAMON is the dried, nearly ripe fruit of *Elettaria cardamomum* White & Maton.

8. CARDAMOM SEED is the dried seed of cardamom. It contains not more than eight per cent (8%) of total ash, nor more than three per cent (3%) of ash insoluble in hydrochloric acid.

9. RED PEPPER is the red, dried, ripe fruit of any species of Capiscum. It contains not more than eight per cent (8%) of total ash, nor more than one per cent (1%) of ash insoluble in hydrochloric acid.

10. CAYENNE PEPPER, CAYENNE, is the dried, ripe fruit of *Capsicum frutescens* L., *Capsicum baccatum* L., or some other small-fruited species of Capsicum. It contains not less than fifteen per cent (15%) of non-volatile ether extract, not more than one and five-tenths per cent (1.5%) of starch, not more than twenty-eight per cent (28%) of crude fiber, not more than seven per cent (7%) of total ash, nor more than one per cent (1%) of ash insoluble in hydrochloric acid.

11. PAPRIKA is the dried, ripe fruit of *Capsicum annuum* L. It contains not more than eight and five-tenths per cent (8.5%) of total ash, nor more than one per cent (1%) of ash insoluble in hydrochloric acid. The iodin number of its extracted oil is not less than 125, nor more than 136.

12. HUNGARIAN PAPRIKA is paprika having the pungency and flavor characteristic of that grown in Hungary.

(a) ROSENPAPRIKA, ROZSAPAPRIKA, ROSE PAPRIKA, is Hungarian paprika prepared by grinding specially selected pods of paprika, from which the placentæ, stalks, and stems have been removed. It contains no more seeds than the normal pods, not more than eighteen per cent (18%) of non-volatile ether extract, not more than twenty-three per cent (23%) of crude fiber, not more than six per cent (6%) of total ash, nor more than four-tenths per cent (0.4%) of ash insoluble in hydrochloric acid.

(b) KOENIGSPAPRIKA, KING'S PAPRIKA, is Hungarian paprika prepared by grinding whole pods of paprika without selection, and includes the seeds and stems naturally occurring with the pods. It contains not more than eighteen per cent (18%) of non-volatile ether extract, not more than twenty-three (23%) of crude fiber, not more than six and five-tenths per cent (6.5%) of total ash, nor more than five-tenths per cent (0.5%) of ash insoluble in hydrochloric acid.

13. PIMENTON, PIMIENTO, SPANISH PAPRIKA, is paprika having the characteristics of that grown in Spain. It contains not more than eighteen per cent (18%) of non-volatile ether extract, not more than twenty-one per cent (21%) of crude fiber, not more than eight and five-tenths per cent (8.5%) of total ash, nor more than one per cent (1%) of ash insoluble in hydrochloric acid.

14. **Celery Seed** is the dried fruit of *Apium graveolens* L. It contains not more than ten per cent (10%) of total ash, nor more than two per cent (2%) of ash insoluble in hydrochloric acid.

15. **Cinnamon** is the dried bark of cultivated varieties of *Cinnamomum zeylanicum* Breyne or of *Cinnamomum cassia* (Nees) Blume, from which the outer layers may or may not have been removed.

16. **Ceylon Cinnamon** is the dried inner bark of cultivated varieties of *Cinnamomum Zeylanicum* Breyne.

17. **Saigon Cinnamon, Cassia** is the dried bark of cultivated varieties of *Cinnamomum cassia* (Nees) Blume.

18. **Ground Cinnamon,* Ground Cassia**, is the powder made from cinnamon. It contains not more than five per cent (5%) of total ash, nor more than two per cent (2%) of ash insoluble in hydrochloric acid.

19. **Cloves** are the dried flower buds of *Caryophyllus aromaticus* L. They contain not more than five per cent (5%) of clove stems, not less than fifteen per cent (15%) of volatile ether extract, not less than twelve per cent (12%) of quercitannic acid (calculated from the total oxygen absorbed by the aqueous extract), not more than ten per cent (10%) of crude fiber, not more than seven per cent (7%) of total ash, nor more than five-tenths per cent (0.5%) of ash insoluble in hydrochloric acid.

20. **Coriander Seed** is the dried fruit of *Coriandrum sativum* L. It contains not more than seven per cent (7%) of total ash, nor more than one and five-tenths per cent (1.5%) of ash insoluble in hydrochloric acid.

21. **Cumin Seed** is the dried fruit of *Cuminum cyminum* L. It contains not more than eight and five-tenths per cent (8.5%) of total ash, nor more than one and five-tenths per cent (1.5%) of ash insoluble in hydrochloric acid.

22. **Curcuma, Turmeric**, is the dried rhizome or bulbous roots of *Curcuma longa* L.

23. **Drill Seed** is the dried fruit of *Anethum graveolens* L. It contains not more than ten per cent (10%) of total ash, nor more than three per cent (3%) of ash insoluble in hydrochloric acid.

24. **Fennel Seed** is the dried fruit of cultivated varieties of *Foeniculum vulgare* Hill. It contains not more than nine per cent (9%) of total ash, nor more than two per cent (2%) of ash insoluble in hydrochloric acid.

25. **Ginger** is the washed and dried, or decorticated and dried, rhizome of *Zinziber officinale* Roscoe. It contains not less than forty-two per cent (42%) of starch, not more than eight per cent (8%) of crude fiber, not more than one per cent (1%) of lime (CaO), not less than twelve per cent (12%) of cold water extract, not more than seven per cent (7%) of total ash, not more than two per cent (2%) of ash insoluble in hydrochloric acid, nor less than two per cent (2%) of ash soluble in cold water.

26. **Jamacia Ginger** is ginger grown in Jamacia. It contains not less than fifteen per cent (15%) of cold water extract, and conforms in other respects to the standards for ginger.

27. **Limed Ginger, Bleached Ginger**, is whole ginger coated with carbonate of calcium. It contains not more than four per cent (4%) of carbonate of calcium, nor more than ten per cent (10%) of total ash, and conforms in other respects to the standards for ginger.

28. **Horse-Radish** is the root of *Radicula armoracia* (L.) Robinson.

29. **Prepared Horse-Radish** is comminuted horse-radish, with or without a vinegar.

30. **Mace** is the dried arillus of *Myristica fragrans* Houtt. It contains not less than twenty per cent (20%) nor more than thirty per cent (30%) of non-volatile ether extract, not more than 10 per cent (10%) of crude fiber, not more than three per cent (3%) of total ash, nor more than five-tenths per cent (0.5%) of ash insoluble in hydrochloric acid.

31. **Macassar Mace, Papua Mace**, is the dried arillus of *Myristica argentea* Warb.

32. **Marjoram** is the dried leaves, with or without a small proportion of the flowering tops, of the *Majorana hortensis* Moench.

33. **Mustard Seed** is the seed of *Sinapis alba* L. (White mustard), *Brassica nigra* (L.) Koch (Black mustard), *Brassica juncea* Hook f. et Th., or varieties or closely related species of the types of *Brassica nigra* and *Brassica juncea*.

Sinapis alba (White mustard) contains no appreciable amount of volatile oil. It contains not more than five per cent (5%) of total ash, nor more than one and five-tenths per cent (1.5%) of ash insoluble in hydrochloric acid.

Brassica nigra (Black mustard) and *Brassica juncea* yield six-tenths per cent (0.6%) of volatile mustard oil (calculated as allylisothiocyanate and determined by the method given in Service and Regulatory Announcements, Chemistry 20). The varieties and species closely related to the types of *Brassica nigra* and *Brassica juncea* yield not less than six-tenths per cent (0.6%) of volatile mustard oil, similar in character and composition to the volatile oils yielded by *Brassica nigra* and

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*The question of the use of cassia buds in ground cinnamon is under consideration.

Brassica juncea. These mustard seeds contain not more than five per cent (5%) of total ash, nor more than one and five-tenths per cent (1.5%) of ash insoluble in hydrochloric acid.

34. **Ground Mustard** is the powder made from mustard seed, and conforms to the standards for mustard seed.

35. **Mustard Flour** is the powder made from mustard seed with the hulls largely removed and with or without the removal of a portion of the fixed oil. It contains not more than one and five-tenths per cent (1.5%) of starch, nor more than six per cent (6%) of total ash.

36. **Prepared Mustard, German Mustard, French Mustard, Mustard Paste,** is a paste composed of a mixture of ground mustard or mustard flour, with salt a vinegar, and with or without spices or other condiments which do not stimulate the color of yellow ground mustard. Calculated free from water, fat and salt, it contains not more than twenty-four per cent (24%) of carbohydrates (calculated as starch), not more than twelve per cent (12%) of crude fiber, nor less than five and six-tenths per cent (5.6%) of nitrogen derived solely from the materials herein named.

37. **Nutmeg** is the dried seed of *Myristica fragrans* Houtt. deprived of its testa, with or without a thin coating of lime (CaO). It contains not less than twenty-five per cent (25%) of non-volatile ether extract, not more than ten per cent (10%) of crude fiber, not more than five per cent (5%) of total ash, nor more than five-tenths per cent (0.5%) of ash insoluble in hydrochloric acid.

38. **Macassar Nutmeg, Papua Nutmeg, Male Nutmeg, Long Nutmeg,** is the dried seed of *Myristica argentea* Warb., deprived of its testa.

39. **Paradise Seed, Grains of Paradise, Guinea Grains, Melegueta Pepper,** is the seed of *Amomum melegueta* Roscoe.

40. **Parsley Leaves** are the leaves of *Petroselinum sativum* Hoffm.

41. **Black Pepper** is the dried immature berry of *Piper nigrum* L. It contains not less than six and seventy-five hundredths per cent (6.75%) of non-volatile ether extract, not less than thirty per cent (30%) of starch, not more than seven per cent (7%) of total ash, nor more than one and five-tenths per cent (1.5%) of ash insoluble in hydrochloric acid.

42. **Ground Black Pepper** is the product made by grinding the entire berry of *Piper nigrum* L. It contains the several parts of the berry in their normal proportions.

43. **Long Pepper** is the dried fruit of *Piper longum* L.

44. **White Pepper** is the dried mature berry of *Piper nigrum* L., from which the outer coating, or the outer and inner coatings have been removed. It contains not less than seven per cent (7%) of non-volatile ether extract, not less than fifty-two per cent (52%) of starch, not more than five per cent (5%) of crude fiber, not more than three and five-tenths per cent (3.5%) of total ash, nor more than three-tenths per cent (0.3%) of ash insoluble in hydrochloric acid.

45. **Saffron** is the dried stigma of *Crocus sativus* L. It contains not more than ten per cent (10%) of yellow styles and other foreign matter, not more than fourteen per cent (14%) of volatile matter when dried at 100° C., not more than six per cent (6%) of total ash, nor more than one per cent (1%) of ash insoluble in hydrochloric acid.

46. **Sage** is the dried leaf of *Salvia officinalis* L. It contains not less than one per cent (1%) of volatile ether extract, not more than twenty-five per cent (25%) of crude fiber, not more than ten per cent (10%) of total ash, nor more than one per cent (1%) of ash insoluble in hydrochloric acid.

47. **Savory, Summer Savory,** is the dried leaf and flowering tops of *Satureja hortensis* L.

48. **Star Aniseed** is the dried fruit of *Illicium verum* Hook. It contains not more than five per cent (5%) of total ash.

49. **Tarragon** is the dried leaves and flowering tops of *Artemisia dracunculus* L.

50. **Thyme** is the dried leaves and flowering tops of *Thymus vulgaris* L. It contains not more than fourteen per cent (14%) of total ash, nor more than four per cent (4%) of ash insoluble in hydrochloric acid.

The foregoing definitions and standards are adopted as a guide for the officials of this department in enforcing the Food and Drugs Act.

FOOD INSPECTION DECISION 173.

Canned Vegetables, Canned Peas, and Canned Pea Grades.

The following definitions and standards for canned vegetables, canned peas, and canned pea grades were adopted by the Joint Committee on Definitions and Standards April 25, 1917, and were approved by the Association of American Dairy, Food, and Drug Officials August 3, 1917, and by the Association of Official Agricultural Chemists November 21, 1917:

1. *Canned vegetables* are properly matured and prepared fresh vegetables, with or without the addition of potable water, salt, and sugar, as specified in the separate definitions for the several kinds of canned vegetables, sterlized by heat, with or without previous cooking in vessels from which they take up no injurious substance, and kept in suitable, clean, hermetically sealed containers.

2. *Canned peas* are the canned vegetables prepared from the well developed but still tender seeds of the common or garden pea (*Pisum sativum*) by shelling, winnowing and thorough washing, with or without grading and with or without precooking (blanching), and by the addition, before sterilization, of the necessary amount of potable water, with or without sugar and salt.

CANNED PEA VARIETIES.

3. *Early peas* are peas of early maturing sorts having a smooth skin.

4. *Sugar peas, sweet peas,* are peas of later maturing varieties having a wrinkled skin and sweet flavor.

CANNED PEA GRADES.

5. *Fancy peas* are young, succulent peas of fairly uniform size and color, unless declared to be ungraded for size, with reasonably clear liquor, and free from flavor defects due to imperfect processing.

6. *Standard peas* are less succulent peas than the "fancy" grade, but green and of mellow consistency, of uniform size and color, unless declared to be ungraded for size, with reasonably clear liquor, though not necessarily free from sediment, and reasonably free from flavor defects due to imperfect processing.

7. *Sub-standard* peas are peas that are over-mature, though not fully ripened, or that lack in other respects the qualifications for the standard grade.

CANNED PEA SIZES.

No. 1 peas are peas which were, before precooking (blanching), small enough to pass through a screen of 9/32-inch (7 mm.) mesh.

No. 2 peas are peas which were, before precooking (blanching), small enough to pass through a screen of 10/32-inch (8 mm.) mesh.

No. 3 peas are peas which were, before precooking (blanching), small enough to pass through a screen of 11/32-inch (8.7 mm.) mesh.

No. 4 peas are peas which were, before precooking (blanching), small enough to pass through a screen of 12/32-inch (9.5 mm.) mesh.

No. 5 peas are peas which were, before precooking (blanching) small enough to pass through a screen of 13/32-inch (10.3 mm.) mesh.

No. 6 peas are peas not all of which were, before precooking (blanching), small enough to pass through a screen of 13/32-inch (10.3 mm.) mesh.

The foregoing definitions and standards are adopted as a guide for the officials of this department in enforcing the Food and Drugs Act.

FOOD INSPECTION DECISION 174.

Baking Powder.

The following definition and standard for baking powder was adopted by the Joint Committee on Definitions and Standards November 18, 1916, and was approved by the executive committee of the Association of American Dairy, Food, and Drug Officials for the Association of American Dairy, Food and Drug Officials April 2, 1917, and by the Association of Official Agricultural Chemists November 22, 1916:

Baking powder is the leavening agent produced by the mixing of an acid reacting material* and sodium bicarbonate, with or without starch or flour.

It yields not less than twelve per cent (12%) of available carbon dioxide.

The acid reacting materials in baking powder are: (1) Tartaric acid or its acid salts, (2) acid salts of phosphoric acid, (3) compounds of aluminium, or (4) any combination in substantial proportions of the foregoing.

The foregoing definition and standard is adopted as a guide for the officials of this department in enforcing the Food and Drugs Act.

D. F. Houston,
Secretary of Agriculture.

Washington, D. C., *February 26, 1918.*

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*The announcement of the amount of calcium sulphate which reacts as an acid reacting material in baking powder is reserved pending further investigation.

The announcement of the amount of other salts of phosphoric acid which react in baking powder is reserved pending further investigation.

Baking powder materials should be as free from metallic impurities as it is feasible for a manufacturer to make them. The announcement of the limits for arsenic, lead, zinc, and flourids is reserved pending further investigation.

BUREAU OF REGISTRATION OF NURSES FOR APRIL, 1918.

Anna C. Jammé, R.N., Director.

At the regular monthly meeting of the State Board of Health, held April 6th, a revision of the requirements for accredited schools was adopted.

A readjustment of the course of instruction has become necessary in order to meet war needs and has also required establishing methods of admission to schools of nursing. These requirements become effective September 1st of this year.

The need of a larger number of nurses for our army and nursing service demands change in the arrangement in the course of instruction, whereby the work may be pushed forward during the first and second years of the professional training, leaving the third year somewhat free in view of the fact that the government may, during the period of the war, require students in their third year to be assigned to military hospitals to complete their course of training. The plan for the admission of students will afford opportunity to many capable and intelligent young women who are fitted for the work and who desire to take it up with a serious purpose in view.

The plan of instruction as outlined will not to any great degree disturb the present arrangement of courses carried on in the schools of nursing. It merely takes from the first half year the three fundamental scientific subjects, chemistry, biology and physiology, nutrition and cookery, and places them in the secondary schools. This gives a far better opportunity to the student of nursing to get a broader foundation for her training, to enrich her fund of general knowledge, and to acquire better judgment and stronger mental poise. It opens the way for the study of the purely professional subjects and quickens her vocational interest by giving her a motive for her work in the secondary school.

At this meeting the certificate as registered nurse was granted to 194 successful applicants who took the examination on February 20th and 21st.

The next examination will be held on June 19th and 20th. Applicants desiring to take this examination should write for application forms early in May. Completed applications should be on file in the office of the bureau not later than June 14th.

LIST OF COUNTY AND CITY HEALTH OFFICERS.

Alameda County—
Dr J. Hal Cope — Pleasanton
Alameda — Dr. A. Hieronymus
Albany — Dr. J. F. Diddle
Berkeley — Dr. J. J. Benton
Emeryvile — Dr. A. T. Drennan
Hayward — Dr. F. W. Browning
Livermore — Dr. J. K. Warner
Oakland — Dr. Kirby B. Smith
Piedmont — Dr. Benj. T. Mouser
Pleasanton — Dr. J. Hal Cope
San Leandro — Dr. Luther Michael

Alpine County—
Mr. Fred S. Dunlap — Markleeville

Amador County—
Dr. G. L. Lynch — Amador City
Jackson — H. E. Kay
Plymouth — W. J. Ninnis
Sutter Creek — T. W. Trudgen

Butte County—
Dr. L. L. Thompson — Gridley
Biggs — R. W. Simmons
Chico — W. H. Marshall
Gridley — Dr. L. Q. Thompson
Oroville — Dr. W. F. Gates

Calaveras County—
Dr. George F. Pache, Angels Camp
Angels Camp — Dr. E. W. Weirich

Colusa County—
Dr. G. W. Desrosier — Colusa
Colusa — Dr. G. W. Desrosier

Contra Costa County—
Dr. Chas. R. Blake — Richmond
Antioch — Dr. W. S. George
Concord — Dr. F. F. Neff
El Cerrito — Dr. J. F. Diddle
Hercules — Dr. C. T. Wetmore
Martinez — Dr. Edwin Merrithew
Pinole — Dr. M. L. Fernandez
Pittsburg — Dr. H. E. Peters
Richmond — Dr. Chas. R. Blake
Walnut Creek — Dr. C. R. Leech

Del Norte County—
Dr. E. M. Fine — Crescent City
Crescent City — Dr. E. M. Fine

El Dorado County—
Dr. S. H. Rantz — Placerville
Placerville — G. H. Wickes

Fresno County—
Dr. G. L. Long — Fresno
Clovis — Dr. M. S. McMurtry
Coalinga — Dr. C. W. Hutchison
Firebaugh — Dr. H. J. Greven
Fowler — Chas. Chapman
Fresno — Dr. C. Mathewson
Kingsburg — Dr. J. A. Gillespie
Reedley — Dr. Chas. H. Traber
Sanger — Dr. Thos. F. Madden
Selma — Dr. Fred H. Williams

Glenn County—
Dr. Etta S. Lund — Willows
Orland — Dr. S. Iglick
Willows — Dr. W. H. Walker

Humboldt County—
Dr. Joseph Walsh — Eureka
Arcata — Dr. G. W. McKinnon
Blue Lake — Dr. Earl W. Hill
Eureka — Dr. L. A. Wing
Ferndale — Dr. A. P. Griffin
Fortuna — Dr. Orville Rockwell

Imperial County—
Dr. R. K. McGuffin — Imperial
Brawley — Dr. Eugene Le Baron
Calexico — Dr. P. N. Sims
El Centro — Dr. F. A. Burger
Holtville — C. A. Johnston
Imperial — Dr. R. K. McGuffin

Inyo County—
Dr. I. J. Woodin — Independence
Bishop — John B. Clarke

Kern County—
Dr. C. A. Morris — Bakersfield
Bakersfield — Dr. P. J. Cuneo
Delano — Dr. J. R. Hicks
Maricopa — Dr. H. N. Taylor
McKittrick — Dr. Robert C. Dear
Taft — Dr. M. W. Pascoe
Tehachapi — Dr. T. F. O'Reilly

Kings County—
Dr. C. L. Scott — Hanford
Corcoran — Dr. J. T. Peery
Hanford — Dr. A. S. Torrens
Lemoore — Dr. W. P. Byron

Lake County—
Dr. A. N. Craig — Kelseyville
Lakeport — P. H. Millberry

Lassen County—
Dr. W. E. Dozier — Susanville
Susanville — Dr. F. D. Walsh

Los Angeles County—
Dr. J. L. Pomeroy — Los Angeles
Alhambra — Dr. F. E. Corey
Arcadia — Dr. Chas D. Gaylord
Avalon — Dr. J. J. Peckham
Azusa — Dr. John E. Hill
Beverly Hills — Dr. Oscar H. Mueller
Burbank — Dr. E. H. Thompson
Claremont — Dr. A. V. Stoughton
Compton — E. E. Elliot
Covina —
Culver City —
Eagle Rock — Dr. C. H. Phinney
El Monte — Dr. S. L. Corpe
El Segundo — R. F. Davis
Glendale — Dr. R. E. Chase
Glendora — Dr. L. N. Suydam
Hermosa Beach — B. F. Brown
Huntington Park — Dr. W. Thompson
Inglewood — Dr. W. W. Reber
La Verne — Dr. J. E. Hubble
Long Beach — Dr. R. L. Taylor
Los Angeles — Dr. L. M. Powers
Manhattan Beach — Llewellyn Price
Monrovia — Dr. Chas. D. Gaylord
Monterey Park — Dr. J. S. Trewhella
Pasadena — Dr. Stanley P. Black
Pomona — Dr. N. J. Rice
Redondo Beach — Dr. D. R. Hancock
San Fernando — Dr. Benj. B. Ward
San Gabriel — Dr. Wm. W. Worster
San Marino — Dr. W. LeMoyne Wills
Santa Monica — Dr. F. J. Wagner
Sawtelle — Dr. A. B. Hromadka
Sierra Madre — Dr. R. H. Mackerras
South Pasadena — Dr. C. F. Metcalf
Venice — Dr. W. M. Kendall
Vernon — Dr. L. J. Williams
Watts — Dr. E. J. Riche
Whittier — Dr. W. H. Stokes

Madera County—
Dr. L. St. John Hely — Madera
Madera — Dr. L. St. John Hely

Marin County—
Dr. J. H. Kuser — Novato
Belvedere — Dr. Florence Scott
Corte Madera —
Larkspur — Dr. L. Newman
Mill Valley — James V. Chase
Ross — Dr. Thos. U. Smith
San Anselmo — Dr. O. W. Jones
San Rafael — Dr. W. F. Jones
Sausalito — Dr. Allen H. Vance

Mariposa County—
Dr. F. L. Wright — Mariposa

Mendocino County—
Dr. S. L. Rea — Ukiah
Fort Bragg — Dr. L. C. Gregory
Point Arena — Conrad Nicks
Potter Valley — W. T. Eddie
Ukiah — Dr. Lew K. Van Allen
Willits — Dr. F. C. Gunn

Merced County—
Dr. J. L. Mudd — Merced
Gustine — Dr. C. E. Stagner
Los Banos — Dr. R. Jadarola
Merced — Dr. H. Kylberg

Modoc County—
Dr. John Stile — Alturas
Alturas — Dr. John Stile

Mono County—
Dr. C. W. Wood — Bridgeport

Monterey County—
Dr. J. A. Beck — Salinas
Carmel-by-the-Sea — J. F. Beardsley
King City — Dr. D. Brumwell
Monterey — C. A. Kiernan
Pacific Grove — James P. Evans
Salinas — W. E. Hallock

LIST OF COUNTY AND CITY HEALTH OFFICERS—Continued.

Napa County—
Dr. O. T. Schulze------------Napa
Calistoga------------------L. Randall
Napa----------------Harry Von Arx
St. Helena--------------J. G. Johnson
Nevada County—
Dr. Carl P. Jones-----Grass Valley
Grass Valley------------Dr. J. E. Yates
Nevada City----------Geo. H. Calanan
Orange County—
Dr. A. H. Domann------Santa Ana
Anaheim------------Dr. J. W. Truxaw
Brea----------------Dr. W. W. Davis
Fullerton--------------Dr. J. H. Lang
Huntington Beach------Dr. G. A. Shank
Newport Beach------------J. A. Porter
Orange-------------Dr. F. L. Chapline
Santa Ana-------------Dr. J. I. Clark
Seal Beach---------Dr. J. Park Dougall
Stanton-------------------J. H. Swan
Placer County—
Dr. John Manson-----------Lincoln
Auburn--------------Dr. A. N. Couture
Colfax----------------Dr. R. A. Peers
Lincoln-------------------F. R. Elder
Rocklin---------------Wm. H. Keeley
Roseville----------------G. W. Lohse
Plumas County—
Dr. B. J. Lasswell----------Quincy
Riverside County—
Dr. James G. Baird------Riverside
Banning-----------------Dr. L. M. Ryan
Beaumont---------------Dr. F. D. West
Blythe------------Dr. W. H. Chapman
Corona---------------Dr. W. S. Davis
Elsinore----------------Dr. G. E. Shank
Hemet------------------Dr. H. O. Miller
Perris------------------Dr. J. W. Reese
Riverside---------Dr. G. W. Girdlestone
San Jacinto----------Charles Y. Adams
Sacramento County—
Dr. J. H. Leimbach---------Isleton
Sacramento-----------Dr. W. J. Hanna
San Benito County—
Dr. J. M. O'Donnell-------Hollister
Hollister-----------Dr. J. M. O'Donnell
San Juan----------Joseph De Lucchi
San Bernardino County—
Dr. Edward Brigham-S. Bernardino
Chino------------------Dr. Elgar Reed
Colton---------------Dr. J. A. Champion
Needles----------------Dr. A. S. Parker
Ontario---------Dr. Calvert L. Emmons
Redlands-----------Dr. Wm. A. Taltavall
Rialto-------------------Dr. L. P. Barbour
San Bernardino------Dr. F. M. Gardner
Upland---------------------E. R. Bowman
San Diego County—
Dr. A. M. Lesem---------San Diego
Chula Vista-------------Dr. G. E. Fuller
Coronado------------Dr. Raffael Lorini
East San Diego-----Dr. C. R. Carpenter
El Cajon-------------Dr. Chas. R. Knox
Escondido----------------Dr. B. L. Crise
La Mesa--------------Dr. L. W. Zochert
National City-----------Dr. C. S. Owen
Oceanside---------------Dr. R. S. Reid
San Diego----Dr. E. P, Chartres-Martin
San Francisco (city and county)—
Dr. W. C. Hassler----San Francisco
San Joaquin County—
Dr. John T. Davison----------Stockton
Lodi----------------------Dr. S. W. Hopkins
Stockton---------------Dr, Linwood Dozier
Tracy----------------------Dr. J. G. Murrell
San Luis Obispo County—
Dr. C. J. McGovern---San Luis Obispo
Arroyo Grande----------Dr. H. A. Gallup
Paso Robles----------------W. W. Hughes
San Luis Obispo-------------W. F. Cook
San Mateo County—
Dr. F. Holmes Smith----San Bruno
Burlingame----Dr. Jane H. Parkhurst
Daly City---------------Dr. A. H. Rankin
Hillsborough--------------C. M. Hirschey
Redwood City--------------Dr. J. L. Ross
San Bruno---------Dr. F. Holmes Smith
San Mateo-----------------W. C. McLean
So. San Francisco--Dr. J. C. McGovern
Santa Barbara County—
Dr. G. S. Lovern---Santa Barbara
Lompoc-------------Dr. C. B. Constable
Santa Barbara----------Dr. C. S. Stevens
Santa Maria-----------Dr. O. P. Paulding
Santa Cruz County—
Dr. Wm. H. Keck------Santa Cruz
Santa Cruz----------Dr. A. N. Nittler
Watsonville---------Dr. F. H. Koepke
Santa Clara County—
Dr. Wm, Simpson----------San Jose
Alviso------------------Dr. J. I. Beattie
Gilroy--------------------Dr. J. W. Thayer
Los Gatos-------------Dr. R. S. Anthony
Mayfield--------------------Joseph Ponce
Morgan Hill--------------Dr. W. D. Miner
Mountain View--Dr. A. H. MacFarlane
Palo Alto--------------------Louis Olson
San Jose-----------------Dr. D. A. Beattie
Santa Clara--------------Dr. G. W. Fowler
Sunnyvale------Mrs. Norman Schofield
Shasta County—
Dr. S. T. White-----------Redding
Kennett-------------Dr. J. P. Sandholt
Redding------------------E. A. Rolison
Sierra County—
Dr. O. A. Eckhardt-----Downieville
Loyalton----------------B. M. Wheeler
Siskiyou County—
Dr. W. F. Shaw--------------Yreka
Dorris-------------------Otha A. Wilkins
Dunsmuir------------Herman Woodward
Etna--------------------Dr. W. H. Haines
Fort Jones------------------S. R. Taylor
Montague--------------Hugh W. French
Sisson---------------------Dr. Paul Wright
Yreka-----------------------Dr W. F. Shaw
Solano County—
Dr. W. C. Jenney---------Vacaville
Benicia-----------------------Dr. P. B. Fry
Dixon--------------------------H. G. Grove
Fairfield-----------------------F. L. Morrill
Rio Vista ------------------------------
Suisun-------------------Dr. A. G. Bailey
Vacaville----------------------W. F. Hughes
Vallejo---------------Dr. E. A. Peterson
Sonoma County—
Dr. F. O. Pryor-------------Santa Rosa
Cloverdale-------------------E. E. Gibbons
Healdsburg----------------Dr. J. W. Seawell
Petaluma-----------------Dr. R. B. Duncan
Santa Rosa----------Dr. Jackson Temple
Sebastopol-----------------Dr. W. J. Kerr
Sonoma----------------------J. H. Albertson
Stanislaus County—
Dr. J. L. Hennemuth------Modesto
Modesto-------------Dr. J. W. Ransome
Newman------------Dr. H. V. Armistead
Oakdale-------------Dr. F. W. McKibbon
Turlock-----------------Dr. W. L. Wilson
Sutter County—
Dr. I. W. Higgins---------Live Oak
Yuba City----------------Dr. J. H. Barr
Tehama County—
Dr. E. E. Thompson-----Red Bluff
Corning-----------------Dr. O. F. Rudolph
Red Bluff-----------Dr. Walter Gavey
Tehama-------------Dr. Mary B. Poket
Trinity County—
Dr. F. H. Bly----------Weaverville
Tulare County—
Dr. A. W. Preston-----------Visalia
Dinuba------------------Dr. A. N. Loper
Exeter-------------------Dr. J. F. Dungan
Lindsay------------------Dr. C. W. Locke
Porterville---------------Dr. H. A. Todd
Tulare------------------Dr. J. B. Rosson
Visalia----------------Dr. A. W. Preston
Tuolumne County—
Dr. Wm. L. Hood-----------Sonora
Sonora-----------------Dr. G. C. Wrigley
Ventura County—
Dr. A. A. Maulhardt------Oxnard
Fillmore-----------Dr. Will R. Manning
Oxnard-------------Dr. G. A. Broughton
Ventura----------------------J. H. Hardey
Santa Paula-------------Dr. G. C. Nichols
Yolo County—
Dr. W. J. Blevins--------Woodland
Davis---------------------Dr. W. E. Bates
Winters----------------------Dr. R. E. Peck
Woodland-------------------A. Silberstein
Yuba County—
Dr. J. H. Barr-----------Marysville
Marysville------------------Dr. A. L. Miller
Wheatland-----------------W. H. Niemeyer

List of Diseases Reportable by Law

Anthrax
Beri-beri
Cerebrospinal Meningitis (Epidemic)
Chickenpox
Cholera, Asiatic
Dengue
Diphtheria
Dysentery
Erysipelas
German Measles
Glanders
*Gonococcus Infection
Hookworm
Leprosy
Malaria
Measles
Mumps
Ophthalmia Neonatorum
Paratyphoid Fever
Pellagra
Plague
Pneumonia (Lobar)
Poliomyelitis
Rabies
Rocky Mountain Spotted (or Tick) Fever
Scarlet Fever
Smallpox
*Syphilis
Tetanus
Trachoma
Tuberculosis
Typhoid Fever
Typhus Fever
Whooping-cough
Yellow Fever

*Reported by office number. Name and address not required.

Quarantinable Diseases

Cerebrospinal Meningitis (Epidemic)
Cholera, Asiatic
Diphtheria
Leprosy
Plague
Poliomyelitis
Scarlet Fever
Smallpox
Typhus Fever
Yellow Fever

Section 16, Public Health Act. All physicians, nurses, clergymen, attendants, owners, proprietors, managers, employees, and persons living in or visiting any sick person in any hotel, lodging house, house, building, office, structure, or other place where any person shall be ill of any infectious, contagious, or communicable disease, shall promptly report such fact to the county, city and county, city, or other local health board or health officer, together with the name of the person, if known, and place where such person is confined, and nature of the disease, if known.

¶ "If you will not eat potatoes now when they are cheap and plentiful, and when the grower is in danger of actual loss on his crop, what right will you have to complain of potato prices next year, when the grower turns to some other crop in order to make up his losses?"

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